International Journal of American Linguistics

VOLUME XVI NUMBER 1

CENTRAL OTOMIAN I: PROTO-OTOMI RECONSTRUCTIONS

STANLEY NEWMAN
UNIVERSITY OF NEW MEXICO

ROBERT WEITLANER
ESCUELA NACIONAL DE ANTROPOLOGÍA E HISTORIA

1. Introduction
2. Sources
3. Procedures
4. Analysis
5. Reconstructions

1. Several articles have been written dealing with some of the possibly remote relationships of Otomí, and one entire volume, published a little more than a decade ago, is devoted to the Otomian family.[1] However, since none of these studies was based upon a systematic analysis and reconstruction of the phonology, their results can be accepted as only more or less suggestive. Much of the purpose of the present investigation can be explained by indicating that it was undertaken primarily as a training project, in which students could apply and practice the methods of comparative linguistics.[2] Consequently, the emphasis was on the use of systematic, controlled, and clearly stated procedures rather than on the achievement of exciting results.

As a matter of fact, if one is seeking merely to affirm or deny a relationship, the positive genetic relationship of the Otomí dialects can be quite safely affirmed from a casual inspection of even badly transcribed vocabularies, for these dialects are remarkably conservative in spite of their extensive geographical distribution and the presence of intervening languages. Using the same method of inspection, one can also make a pretty good guess that Otomí and Mazahua are likewise related genetically, though here the cognates are somewhat obscured by the numerous assimilatory changes, as it turns out, in Mazahua consonants and vowels. But the weakness of the inspectional method, even for the limited purpose of setting up a linguistic classification, lies in its inability to provide a foundation upon which to build. And it bogs down as it approaches the more remote relationships, precisely those which are of increasing importance for the purposes of classification. It is hoped that this study, however obvious its results in the matter of classification, will provide a sound phonological base upon which comparisons can be made with the more remote relations of the Otomian family.

A provisional classification of the Otomian languages has been set up as a point of departure for subsequent work. Central Otomian refers to Otomí and Mazahua. Southern Otomian, in which we include Matlatzinca and Ocuilteca, appears to be more closely related to the Central group than does Northern Otomian, which covers

[1] Francisco Belmar, Lenguas Indígenas de México: Familia Mixteco-Zapoteca y sus Relaciones con el Otomí (México, 1905); Daniel G. Brinton, On the Affinities of the Otomi Language with Athabascan dialects, Congrès International des Américanistes 1897.151–162; Lawrence Ecker, Relationship of Mixtec to the Otomian Languages, El Mexico Antiguo 4.209–240 (1939); Jacques Soustelle, La Famille Otomí-Pame du Mexique Central (Paris, 1937).

[2] The study was begun as a laboratory project in a course on Methods in Comparative Linguistics, given at the Escuela Nacional de Antropología e Historia by Newman, and was continued later with the help of advanced students. Our thanks are especially due to the following students: María Cristina Alvarez L., María Teresa Fernández, Jesús Olivé N., Evangelina Arana, Osnaya.

Chichimeca and the rather diversified Pame dialects.

2.1. Otomí dialect groups. The speakers of Otomí, who number over 215,000 according to the last census, live in a part of the central plateau and the surrounding mountainous regions of Mexico. Our geographical and linguistic grouping of Otomí dialects is as follows:

Northeastern (or Sierra) Otomí. A relatively small group of dialects, spread over the irregular borders of the states of Hidalgo, Veracruz, and Puebla, is spoken on the eastern escarpment of the central plateau and in the neighboring mountains. In this region Otomí is surrounded by Aztec and Totonac.

Ixtenco. Far to the south of the preceding group, Ixtenco is a single isolated dialect in the state of Tlaxcala. Its neighboring languages are Aztec and Popoloca of Puebla.

Northwestern (or Mesquital) Otomí. This group of dialects covers a larger area and includes a greater number of speakers than any of the other Otomí divisions. It is spread primarily over the central plateau in the state of Hidalgo and extends into the states of Mexico to the south and Querétaro to the west, with a recently separated enclave in Guanajuato. Northwestern Otomí is flanked on the west by Tarascan, on the north by Pame, and on the east and southeast by Aztec. To the southwest lie the Southwestern Otomí dialects.

Southwestern Otomí. Covering primarily the northern part of Mexico state, this group of dialects is spread over the Sierra de las Cruces and its high plateau, the western escarpment of the central plateau, and the Toluca valley. Linguistically as well as geographically this is the most diversified of the Otomí regions. Besides bordering on Northwestern Otomí, this dialect region is either flanked by or interlarded with Aztec, Tarascan, and other languages of the Otomian family.

2.2. Dialect materials. This study is based primarily upon a series of short uniform vocabularies, containing about 450 words and a few phrases, collected in various Otomí-speaking pueblos. The material for nine of the eleven dialects analyzed in this paper consists of word lists of this type, which were gathered mainly by Weitlaner on brief field trips from 1934 to 1939. The transcription in these short vocabularies is phonetic.

A longer word list, containing more than 1500 entries but only partially filled out, was phonemically transcribed at Temoaya, one of the Southwestern dialects, by Henrietta Andrews of the Summer Institute of Linguistics.[3]

Finally, the early 19th Century dictionary of the Franciscan padre, López Yepes, was used as a source.[4] Although this is not a dialect, strictly speaking, since López Yepes does not indicate where he obtained his material, it was included in this study in order to determine through comparisons a) the dialect area represented in the entries and b) the reliability of the quaint transcription. The dictionary contains some 6000 entries, with frequent examples in context: it would provide an extremely valuable source—the richest source we have at present—for future comparative work with Otomí if its provenience could be ascertained and if it were fairly reliable. The comparative evidence shows that the López Yepes dictionary is unquestionably based upon the Northwestern Otomí area. Internal evidence also points to this region as the source, for in a few entries López Yepes makes special reference to differing forms from 'Toluca' (Southwestern) or from 'las sierras' (Northeastern).

[3] We want to thank Andrews and the Summer Institute of Linguistics for providing us with the excellent Temoaya material and for giving us their generous help in other aspects of this study.

[4] Fr. Joaquín López Yepes, Catecismo y Declaración de la Doctrina Cristiana en Lengua Otomí con un Vocabulario del Mismo Idioma (Megico, 1826).

And the reliability of the transcription is surprisingly high, as shown by the degree of correlation between the dictionary forms and the final reconstructions based upon all of the dialect data.

The dialects included in this study are listed below under the four dialect regions, with the name of the pueblo and the year in which the data was obtained. Unless otherwise stated, the material was collected by Weitlaner.

Northeastern Otomí: a) short vocabulary from San Pablito, Puebla, 1935; b) short vocabulary from San Pedro Tlachichilco, Hidalgo, 1934, by Jacques Soustelle and Robert Weitlaner.

Ixtenco: short vocabulary from Ixtenco, Tlaxcala, 1939, by Soustelle and Weitlaner.

Northwestern Otomí: a) short vocabulary from Tepenené, Hidalgo, 1936; b) short vocabulary from Zimapan, Hidalgo, 1935; c) short vocabulary from Tecozautla, Hidalgo, 1934, by Soustelle and Weitlaner; d) dictionary of López Yepes.[4]

Southwestern Otomí: a) short vocabulary from Tilapa, Mexico, 1947; b) short vocabulary from Magú, Mexico, 1938; c) short vocabulary from San Pablo Octupan, Mexico, 1934; d) long vocabulary from Temoaya, Mexico, 1947, by Henrietta Andrews.

2.3. Transcription. The phonetic transcription in which most of our data was recorded includes a far larger number of symbols, especially for indicating the vowels, than the number of phonemes that can be assigned to any of the Otomí dialects. Several sources provided an outline or a description of the phonemic system, on the basis of which our phonetic transcriptions could be normalized.[5] The Temoaya vocabulary, recorded phonemically by Andrews, furnished us with a phonemic control. Finally, the fact that the Otomí dialects show very little differentiation, even on the phonetic level, helped considerably to lighten the task of arriving at a phonemic interpretation of our phonetically transcribed material.

Phonemic substitutions of the original phonetic symbols were made uniformly throughout the data of each dialect. For example, in several of the dialects there occurred a complex symbol (o with dieresis, cedilla, and subscript hook) to indicate a central nasalized vowel slightly higher than ą. In the great majority of cases this complex symbol corresponded to ą in other dialects, and, according to the phonemic descriptions of Otomí, ą is the only central nasalized vowel that can be established. Consequently, the complex symbol was changed to ą in all of its occurrences. But as usually happens in over-refined phonetic recordings, the same complex symbol also occurred in forms where other vowels (ę, ɛ, a, ɔ, o, ʌ) would have been expected in view of the cognates from other dialects. In such cases the same uniform substitution of ą was made for the complex symbol, and if the form did not follow the correspondences eventually set up for the dialects, it was rejected from the evidence. That is to say, different phonemic substitutions were never made for the same phonetic symbol, and in no instance was an individual form phonemicized merely in order to have it correspond to the set of cognates from other dialects. The phonemic substitutions were applied consistently as a method for arriving at a group of systematic correspondences and reconstructions, not as a means for interpreting individual forms.

3.0. Procedures. In order to work out phonological formulas for the mass of data at our disposal, we followed a series of fairly mechanical steps for organizing and analyzing our material. The eleven Otomí

[5]Pedro Carrasco, Esbozo de una Gramática Otomí (manuscript of 17 pages describing the dialect of Tasquillo, Hidalgo, in the Northwestern region); Cartilla Otomí-Espanol, Instituto de Alfabetización en Lenguas Indígenas (Mexico, 1946); Donald E. Sinclair and Kenneth L. Pike, The Tonemes of Mesquital Otomí, IJAL 14.91–98 (1948).

dialects were divided, for comparison, into four pairs and one set of three; in the initial steps only two (or the set of three) dialects were treated at a time. The comparison and analysis of the data proceeded through the following steps:

3.1. Selection of cognates by inspection. For each pair of dialects, slips were made out, each containing a pair of words or morphemes similar in form and meaning. No attempt was made to apply critical standards in this preliminary selection of apparent cognates; the criterion was purely inspectional. It was assumed that the analytic procedures employed later, when all the raw data had been arranged, would eliminate the cognates which did not fit into a system of correspondences.

3.2. Correlation of component phonetic elements. For each cognate pair in the two dialects further slips were filled out, each containing a corresponding pair of the component phonetic elements. The pairing of elements was kept as analytic as possible at this stage. If a cluster in one dialect seemed to correspond to a unit in another, the units were paired and the remaining element in the cluster of one dialect was then paired with a zero in the second dialect. Thus, the correlation of component elements in Tilapa (Southwestern Otomí) yuhtu: Tepenené (Northwestern Otomí) yoto *seven* was y: y, u: o, h: zero, t: t, u: o. This type of fragmentation was used in order to avoid making assumptions as to which clusters functioned as units and which did not. The subsequent tabulation and over-all analysis of the data in the pair of dialects would provide a sounder basis for determining unit clusters, phonemes, and special phonological reflexes of phoneme clusters.

3.3. Tabulation and analysis of correspondences in each dialect pair. After the slips comparing the phonetic elements had been arranged alphabetically, a preliminary tabulation was made, showing the raw correspondences and the number of examples given in the data for each type of correspondence. On the basis of their distribution and correlation in this list of correspondences, the original phonetic symbols were replaced by phonemic substitutions. The preliminary table was then revised to show the types of correspondence, with their frequencies, in terms of phonemes.

The analytic task at this point was to select the acceptable correspondences and to eliminate those which could be regarded as residues. Two criteria were used: the relative frequency of the correspondences, and their symmetrical relations.

An illustration of the numerical distribution of a series of correspondences will help to explain the use of the frequency criterion. In comparing the dialects of Tilapa (Southwestern Otomí) and Tepené (Northwestern Otomí), some 150 apparent cognates were extracted from the original word lists. The comparison and breakdown of these cognates resulted, roughly, in 600 pairs of component phonetic elements. The final tabulation of paired phonemes gave nearly 100 different types of correspondence. But the uneven distribution of frequencies, showing the number of examples for each correspondence type, provided a criterion for accepting or rejecting certain of the types. To illustrate, the correspondences for a and ą in the Tilapa: Tepené comparisons were distributed as follows:— a: a, 34 examples; a: ą, 2 examples; a: zero, 2 examples; ą: a, 2 examples; ą: ą, 22 examples; ɔ: a, 8 examples; zero: ą, 1 example.

It is evident that in this list of seven types of correspondence, only three are attested with a sufficiently large proportion of examples to make them acceptable on a frequency basis:— a: a, ą: ą, and ɔ: a. Correspondences with only one or two examples accounted for more than half of the types of correspondence in every pair of dialects that were compared. These low-frequency correspondences were put aside

for checking later on the basis of symmetry, to see if any of them represented rare occurrences of a type which was part of a more inclusive class of correspondences. Still later, after the comparison of each pair of dialects had been completed, the rarely occurring correspondences in one dialect pair were checked with those in all other dialects, to determine if certain correspondences, though poorly represented in a given dialect pair, could be validated by their repeated occurrence in other dialects, especially by their reappearance in the same cognates.

As a matter of fact, very few of the low-frequency correspondences could be validated by subsequent checking. The great majority remained as unexplainable residues, which had to be rejected finally on the basis of all criteria. In the list of a and ą correspondences given above, only a: zero could be substantiated later, in this case through comparison with other dialects: certain cognates which appeared in the Northeastern, Ixtenco, and Southwestern dialects as three-syllable words with an a-vowel in the second syllable occurred in the Northwestern dialects, of which Tepenené is one, as two-syllable words with the a-vowel zeroed.[6] But among the remaining correspondences, zero: ą (with one example) indicated either a freak abbreviation in the Tilapa cognate or a transcription error. And the a: ą and ą: a correspondences (with two examples each) probably represented errors in transcription, for in all dialect pairs there was a scattering of one or two examples of nasalized: unnasalized and unnasalized: nasalized vowel correspondences for nearly every vowel phoneme, with no evidence of any consistent phonological condition determining the presence or absence of nasalization.

The principal value of the frequency criterion lies in providing an objective basis, derived from the relative weight of the evidence, for making an initial selection of significant correspondences. Low-frequency correspondences can be accepted only if the evidence of other criteria (symmetry of correspondences within the dialect pair, recurrence of correspondences in other dialects) shows them to be significant.

The frequency criterion also offers a practical check on the reliability of the data. In a phonetic transcription one can expect a certain amount of instability in the recording and, as a result, a certain proportion of bogus correspondences appearing in the analysis. This instability is somewhat reduced by making phonemic substitutions for the impressionistically recorded symbols, but it can never be eliminated. If there is a sufficiently large body of data to start with, and if the transcription is reasonably good, the tabulation and analysis of phonetic elements should result in relatively outstanding types of correspondence. If, on the other hand, the correspondences show up with a flat distribution, the evidence does not provide a sound point of departure for making phonological comparisons.

At the beginning of our work with Otomí, for example, we selected two dialects for which we had vocabularies of about 100 words each. After selecting the apparent cognates and breaking them down into their component phonetic elements, we found that nearly all of the correspondences were supported by one, two, or three examples. We took this to mean that the material was too scanty or that the transcription was too unstable to offer a reliable basis for selecting the outstanding correspondences and for putting together the major outlines of a correspondence system. These two dialects were consequently dropped from the study.

3.4. Alignment of the correspondences in all dialects. After the correspondences for each dialect pair had been selected, the sets of final correspondences for all dialects were combined into a master list. A re-check was made, at this point, of the rare correspondences in the dialect pairs, to determine if

[6] Examples of these cognates are given in the final paragraph of **4.2**.

any could be validated and rescued on the basis of their recurrence in other dialects. This re-checking procedure helped primarily to bring out in perspective some of the special phonological changes operating in certain dialects; though the evidence for such conditioned changes was scanty in a given dialect, it could be defined more clearly and accepted when similar evidence reappeared in other dialects.

3.5. Reconstruction of Proto-Otomí phonemes and identification of special phonological changes applying to certain dialects. In the master list, more than half of the correspondences turned out to show identical phonemes in all eleven dialects, and these raised no problem of reconstruction. Except for the nasalized front vowels (**4.6**), the remaining differentiated correspondences always revealed a major pattern: either a group of correspondences showed a symmetrical reflex in all the dialects, as exemplified in the dialect forms of *t, *d, *k, *g (**4.3** and **4.4**); or an individual dialect or dialect group showed a deviation from the others, as in the case of the s of San Pablito (Northeastern Otomí) for *c or the a of all the Northwestern dialects for *ɔ; or several dialects in different regions showed the fusion of a given Proto-Otomí phoneme having differentiated correspondences with another phoneme established through identical correspondences, such as the y in San Pedro Tlachichilco (Northeastern Otomí), Ixtenco, and Magú (Southwestern Otomí) which corresponds to ñ in other dialects as well as to y in all dialects, the obvious reconstructions being* ñ as distinct from *y. In these differentiated correspondences, too, the problem of reconstruction offered no difficulties. Apparently the elimination of rare and dubious correspondences in the analysis of dialect pairs helped considerably to lighten the task of reconstruction.

In addition to reconstruction formulas, the results of comparing all dialects included statements of phonological conditions giving rise to special reflexes in certain dialects; for example, the development of h before intervocalic *p, *t, *k, *c in three of the four Southwestern dialects (**4.77**).

3.6. Reconstruction of cognates. Cognates for each pair of dialects were originally selected by inspection (**3.1**). After the component phonetic elements in the cognates had been correlated (**3.2**) and the correspondences analyzed and selected (**3.3**), the original cognate slips for all dialect pairs were filed together and arranged alphabetically according to their Spanish equivalents. The intervening steps of bringing together the correspondences from all dialects (**3.4**) and of reconstructing the Proto-Otomí phonemes (**3.5**) were conducted by dealing with the phonemic correspondences themselves, without direct reference to the cognates in which they occurred.

In the final procedure of reconstructing morpheme and word forms, we returned to the cognate file, applying the reconstruction formulas and phonological statements (**3.5**) to each set of cognates from all dialects.

In some cases it was necessary to bring together cognates filed under different Spanish terms. But these were so few in number and the differing Spanish entries for a group of cognates were sufficiently related to make the semantic problem a fairly simple one, for even on this level the Otomí dialects show little divergence.

A cognate form which failed to correspond with other cognates in all of its constituent phonemes was rejected from the evidence in this final stage of reconstruction. In dealing previously with dialect pairs, it was possible only to determine if two cognates corresponded or did not correspond. It was not possible to know which of two non-corresponding cognates, if either, could be accepted, until the entire set of cognates from all dialects had been assembled. Thus, Tilapa tɛɛi: Tepenené dɛsɛ *wild cherry* were unacceptable cognates, for they contained the low-frequency i:ɛ correspondence which

had to be rejected in this pair of dialects. After bringing together all cognates of this set, it was found that the Tepenené form corresponded in all of its phonemes with the cognates from six other dialects and consequently could be reinstated in the evidence embracing all dialects. The Tilapa form, which did not agree in its final vowel with that of any other dialect, was thrown out of the final evidence.

The frequency criterion, which proved useful at the analytic stage of setting up correspondences, could not be applied at this reconstructive stage. The soundness of a reconstructed form would depend, not upon the number of cognates in a given set, but upon the over-all correspondence of the cognates and especially upon the occurrence of identifying forms. A group of cognates containing an a-vowel from all four Northwestern dialects, for example, would be ambiguous, a cognate from outside this region being needed to identify the Proto-Otomí form as containing either *a or *ɔ, both of which have fallen together as an a-vowel in Northwestern Otomí.

In many instances an entire set of cognates turned out to be ambiguous, with no identifying forms from the necessary dialects to provide a clear reconstruction. Because of the numerous groups of cognates in our data—the final list includes more than 300—it was felt unnecessary to make questionable or multiple reconstructions for such ambiguous sets. Similarly, it often happened that all forms in a cognate series showed inconsistencies of correspondence in one or another of their constituent phonemes. A serviceable reconstruction might have been pieced together by establishing reconstructed phonemes, one by one, for each of the component elements in the set of cognates, though no single cognate reflected the reconstructed form in all of its phonemes. Here, too, it was felt unnecessary to attempt piecemeal reconstructions for such cognate series in which the individual forms were only partially valid. In case they are needed for later comparisons with languages related to Otomí, these sets of ambiguous cognates and partially valid cognates will be kept in the original data. But they are not included as evidence in the Proto-Otomí list.

4.1. Proto-Otomí phonemes, reconstructed from the dialect material:

p, t, k, ʔ; b, d, g

c [ts], č [tš], s, š, z, h

m, n, ñ; r, w, y

i, į, e, ę, ɛ, a, ą, ɔ, o, u, ų, ʌ (unrounded o), ə (unrounded u)

Tones are recorded in our data only for the Temoaya dialect. There can be little doubt that Otomí is a tone or a tone-stress language.[7] But the task of setting up tone correspondences and reconstructing the tonemes of Proto-Otomí must wait until fuller evidence, especially descriptive evidence, from several dialects is available for comparing their apparently complex tonemic systems.

Syllables are composed of a consonant or consonant cluster plus a vowel or diphthong.[8] The initial consonant clusters of Proto-Otomí are as follows (probable clusters attested from the evidence of individual dialects but not included in the reconstructed forms are included in parentheses):

[7] Sinclair and Pike, loc. cit. We are also indebted to Pike and the Summer Institute of Linguistics for permitting us to consult and for discussing with us the tone material that is now coming in from field stations in various Otomí regions.

[8] In the phonetic transcriptions of Otomí dialects, many words are recorded with an initial vowel. Whenever it has been possible to find cognates in phonemically controlled recordings, such forms show an initial glottal stop. On this point the reconstructions for Proto-Otomí follow the structural requirements in supplying the initial prevocalic glottal stop. Similarly, the glottal stop before voiced consonants is rarely and only sporadically recorded in most of our dialect material, and here too our reconstructions are based upon the more trustworthy recordings rather than upon a consistent majority occurrence for all dialects. A high degree of consistency, however, is shown by all dialects in recording the glottal stop after voiceless consonants.

a) Consonant with ? or h: ph, t?, th, k?, kh, c?, (ch), č?; ?b, ?m, hm, ?n, hn, ?ñ, hñ, ?r, ?w, hw, ?y, hy.

b) Nasal plus consonant: (mp), mb, nt, nd, nk, ng, nc, (nč), (ns), nš.

c) velar (plus glottal) plus w: kw, gw, khw, k?w.[9]

d) št.

e) Three-consonant clusters: (mph), nt?, nth, (nk?), nkh, nc?, (nch), (nč?).

Of the diphthongs, which are limited to combinations of vowel plus i, the following occur: (ei), ęi, ɛi, ai, ąi, ɔi, oi, ųi, (ʌi), əi.

Affixes are monosyllabic. Roots are either monosyllabic or bisyllabic, the latter predominating.

4.2. Morphophonological features. From the available descriptions of Otomí, it is possible to extract a few details of the morphology which have a direct bearing on Otomí phonology, both descriptive and comparative. It must be confessed, however, that there is no adequate description of Otomí morphology. The following remarks are based upon piecing together bits and hints from various sources.

Verbs usually occur in two or three forms, differentiated by an alternation of the initial consonant or consonant cluster. From the dictionary of López Yepes, for example, are such entries as tų, dų *to die* (*dų, 81);[10] ęhę, yęhę *to come* (*?ęhę, 3); ca, za *to bite* (*ca, 45); khųt?i, gųt?i *to pay* (*khųt?i, 149). The first (or primary) form, which is generally quoted as the name form of the verb in vocabularies, is the stem used throughout the tense-aspect paradigms, with the exception of the third person singular and plural of non-present tense paradigms, where the second form is used. Apparently these consonant alternations are selective features of the morpheme: although certain alternations (t∼d, th∼d, k∼g, kh∼g, c∼z) reappear in many verbs, they are not invariable, and some verbs seem to have only one form, such as López Yepes ąhą *to sleep* (*?ąhą, 1).

A third verb form, usually termed the impersonal, sometimes overlaps the primary form when the initial consonantism is ph, th, or kh, sometimes shows a distinct initial, and sometimes is formed by prefixation—an element t- being added to verbs whose primary form begins with h or ?, and h- to those with initial m, n, or ñ. The third form of the verb is employed in constructions expressing an impersonal subject and in the formation of certain noun derivatives.[11]

For comparative purposes the significance of this phenomenon lies in the fact that the primary form of a verb is not always the same in all dialects. Thus, *mbɛphi *to work* (173) is the primary form in some dialects but the secondary in others, which have *pɛphi as the primary. On the whole, this shifting of primary and secondary forms of the verb is relatively rare among the dialects of Otomí. But it occurs more frequently in our comparisons between Otomí and Mazahua. Since the phenomenon of multiple verb forms seems to be a general feature of Otomian, appearing in such remote relatives of Otomí as Pame and Chichimeca, the reshuffling of verb stem forms promises to be an important feature in working out the more remote comparisons.

Morphemes which enter into the process of word building are a) inflectional affixes, such as the pronominal subject prefixes and object suffixes of the verb; b) bound stems, such as *nu- (212), which appears as the first element in certain time and place

[9] From an analysis presented in a very recent manuscript by Henrietta Andrews, kw and gw are interpreted as unit phonemes. [Now published, IJAL 15.213–222 (1949).] Her interpretation fits the structural facts, as far as we know them, more consistently than any previous description of this point: kw and gw are, then, not special clusters but units; and khw and k?w are not peculiar three-consonant clusters but /kʷh/ and /kʷ?/, normal two-consonant clusters of the large group listed as type a.

[10] The numerals refer to the reconstructions at the end of this paper.

[11] Lawrence Ecker, Compendio de Gramática Otomí, manuscript 38–41.

demonstratives and in the independent pronouns, or *gi- *water of*, occurring in *gidɔ *tear* (85, containing *dɔ *eye*, 79) and in López Yepes gišpo *liquid soap* (containing a form of šabo *soap* < Spanish jabón); c) free stems, which may occur independently or in compounds, such as *ši *leaf* (259), which takes on the extended meaning of *covering* in compounds, as in *šidɔ *eyelid* (containing *dɔ *eye*, 79), *šine *lip* (containing *ne *mouth*, 195), *šiphani *hide, skin* (containing *phani *horse*, 235, apparently referring to *large animal* in compounds).

In the compounding of free stems, changes of form take place in stems of more than one syllable. The final vowel of a two-syllable first-position stem is dropped in compounds: *phanthʌ *deer* (*phani *horse*, 235, and *t?ʌhʌ *mountain*, 288). A two-syllable second-position stem loses its first vowel in compounding, and the juxtaposed consonants of the stem undergo certain changes. The glottalization following a stop consonant is lost, as in *phanthʌ; a voiced stop is changed to its corresponding voiceless stop, as in *dąthe *river* (*dą *big*, 63, and *dehe *water*, 64); and the affricative c changes to s, as in *mbospi *ashes* (*mbo- *black*, 176, and *cibi *fire*, 54). Whether these changes are automatic or morphemically determined is not known at present. Some stems, however, are reduced in the compounds of certain dialects but retain their full form in others: reflexes of the form *šiphani *hide, skin*, quoted above, are found in all but the Northwestern dialects, which have *šiphri; similarly, *?yophani *needle* (34, perhaps containing *?yo *reed*, 33) and *zaphani *forage, hay* (containing *za *tree* and, in compounds, *plant*, 328) are Northwestern Otomí *?yophri and *zaphri.[12]

[12] The change of n to r in these Northwestern compounding forms reflects an earlier stage of Otomian. Comparisons with Mazahua show that, in medial position, Central Otomian *n and *r have fallen together in Proto-Otomí *n. In this case the reconstruction is Central Otomian *phari > Proto-Otomí *phani, the free form, and *-phri, the compounding form still preserved in the Northwestern Otomí region.

4.3. Identical correspondences. The majority of consonants and vowels show correspondences with identical phonemes throughout all of the Otomí dialects. The following Proto-Otomí consonants are reconstructed from such identical correspondences:—[13] *p: 226, 227, 239, 279, 322; *t: 84, 243, 278, 279, 314; *k: 124, 125, 127, 206, 329; *?: 1, 36, 189, 278, 279; *č: 59, 60, 62, 263; *š: 249, 250, 257, 261, 270; *z: 70, 171, 328, 329; *h: 1, 64, 92, 93, 190; *m: 160, 161, 180, 187; *n: 60, 125, 189, 248, 257; *r: 17, 242, 243, 244; *w: 119, 320, 321, 329; *y: 36, 242, 322, 323.

Two of the above consonants are relatively rare in our material. No form containing č was recorded from Tilapa (Southwestern Otomí), and only one cognate with č occurs in the data from Temoaya (Southwestern) and San Pedro Tlachichilco (Northeastern). For r no cognate was recorded from Tecozautla (Northwestern). The evidence, therefore, does not guarantee that č and r occur in each one of the Otomí dialects, but the presence of these consonants as identical correspondences in cognates from the great majority of the dialects and from all of the dialect areas is sufficiently strong evidence for including them among the Proto-Otomí consonants.

Like the consonants listed above, the following reconstructed vowels are based upon identical correspondences:— *i: 38, 190, 278, 279, 322; *ɛ: 2, 71, 172, 173, 320; *a: 226, 227, 278, 279, 328; *ą: 1, 37, 63, 93, 218; *u: 55, 62, 248, 261; *ų: 55, 62, 70, 110; *ʌ: 36, 204, 205, 250.

4.4. Differentiated correspondences. Consonants and vowels which show differ-

[13] The numbers following each Proto-Otomí phoneme refer to the reconstructed forms in section 5 at the end of this paper. These references are not intended to show all of the evidence upon which the correspondences and reconstructions are based, for it would be impossibly lengthy in a paper of this scope to give all of the cognates from all dialects. With each Proto-Otomí phoneme four or five references are given, leading only to those reconstructed forms with which dialect evidence is given in the form of cognates.

entiated reflexes in the dialects are listed with their reconstructions in the following table.[14]

	NE		IXT	NW				SW			
Proto-Otomí	Spab	Sped		Tep	Zim	Tec	Lop	Til	Magú	Spoc	Tem
*b	p	p	b	b	b	b	b	b	b	b	b
*mb	b	b	m	b	b	b	b	p	b	m	b
*d	t	t	d	d	d	d	d	t-, -d-	d	d	d
*g	k	k	g	g	g	g	g	k-, -g-	g	g	g
*c	s, c/ʔ	c	c	c	c	c	c	c	c	c	c
*s	s	s	c	s	s	s	s	c	s	c	s
*ñ	ñ	y	y	ñ	ñ	ñ	ñ- -y-	ñ	y	ñ	ñ
*į	ʔ	ʔ	ʔ	i	i	i	į	ʔ	i	i	į
*e	e	e	ɛ	ɛ	e	e	e	e	e	e	e
*ę	ę	ę	ę	ɛ	ę	ę	ę	į	ę	i	i
*ɔ	ɔ	ɔ	o	a	a	a	a	ɔ	ɔ	ɔ	ɔ
*o	o	o	o	o	o	o	o	u	o	o	o
*ə	ə	ʌ	ʌ	ə	ə	ə	ə	ə	ə	ə	ə

Following the reconstructed phonemes below, the references lead to cognates which illustrate the correspondences:— *b: 2, 37, 38, 92, 278; *mb: 171, 172, 173; *d: 63, 64, 71, 190, 227; *g: 84, 85, 125, 205; *c: 37, 40, 41, 55, 189; *s: 71, 72, 246, 247, 248; *ñ: 110, 127, 172, 218, 219; *į: 119, 251, 314; *e: 36, 64, 161, 171, 205; *ę: 65, 127, 180, 247; *ɔ: 85, 187, 239, 270; *o: 2, 17, 84, 242, 243; *ə: 41, 59, 84, 92, 257.

Among the voiced stops in the table, it will be noted that the dialect reflexes of *d and *g are symmetrical, but those of the labial series follow a somewhat divergent pattern: in Tilapa the reflexes of *b as against *d and *g are different; and a Proto-Otomí *mb must be set up to take care of a distinct set of correspondences which are peculiar to the labial series. The descriptive evidence on the phonemic structure in certain dialects also indicates that the labial stops have a different combinatory pattern, and probably a different history, from the stops in other positions: although tʔ and kʔ occur frequently as initial clusters, p does not combine in this position with ʔ; although ʔb occurs, ʔ does not form an initial cluster with either d or g.

4.5. The problem of voiced and voiceless stops. Insofar as there is a tradition in comparative Otomí linguistics, it is generally assumed that the p, t, k reflexes of what we have reconstructed as *b, *d, *g represent the historically older sounds. This conclusion was based upon the fact that several words cited in the 16th Century grammar of Cárceres and in the 17th Century Codex de Huichapan show voiceless

[14] In the table and in the text hereafter, dialect regions will be indicated by NE (Northeastern Otomí), IXT (Ixtenco, an isolated southeastern area in which only a single dialect of Otomí is spoken), NW (Northwestern Otomí), and SW (Southwestern Otomí). Reference to the individual dialects will be made by the following abbreviations: Lop (López Yepes), Magú (not abbreviated), Spab (San Pablito), Sped (San Pedro Tlachichilco), Spoc (San Pedro Octupan), Tec (Tecozautla), Tem (Temoaya), Tep (Tepenené), Til (Tilapa), Zim (Zimapan).

stops where most of the dialects today have voiced stops.[15]

Even assuming that the phonetics of these documents is reasonably trustworthy—and this is an assumption not warranted by the internal evidence itself—the absence of any clear dialect provenience for these documents makes their use for purposes of dialect history extremely dangerous. Our reasons for regarding the voiced consonants as Proto-Otomí forms and their voiceless correspondents in certain dialects as relatively recent local developments are:

a) The voiceless correspondents cannot be assigned to the Proto-Otomí period, for this would necessitate pooling our reconstructed *b, *d, *g with *p, *t, *k and assuming that there was only a single original series of stops, from which the present Otomí dialects developed voiced stops under certain conditions and retained the voiceless stops under others. There is no evidence within Otomí for this conditioned bifurcation of an originally single series of stops.

b) The presence of two series of stops, voiced and voiceless, must be assigned not only to a Proto-Otomí period but to an even earlier Otomian level. Our comparisons with Mazahua, the Otomian language which seems to be most closely related to Otomí, show a clear-cut differentiation of Mazahua correspondences for Otomí *b as against *p, *d as against *t, *g as against *k.

c) All evidence points to the voiceless correspondents of *b, *d, *g in the NE dialects and in Tilapa (one of the SW group) as a change which began in a single sub-group of Otomí and has developed to varying degrees of completeness and in somewhat different ways in the regions where it now is found.

The linguistic evidence shows that voiced stops occur in all Otomí dialects. The devoicing process has gone farthest in the NE dialect of San Pedro Tlachichilco, where out of nearly five hundred entries only a half-dozen are residues containing d and g from *d and *g. (The b is omitted from this alignment, for it does not correspond to *b but to* mb.) More instances of d and g occur in our material from San Pablito, the other NE dialect. In Tilapa devoicing has been limited to initial position, the voiced stops remaining consistently in medial position. In short, the change from voiced to voiceless stops has not yet been completed and has nowhere in Otomí entirely swamped out the Proto-Otomí voiced stops.

With regard to geographical evidence, the SW area, which includes Tilapa with its initial devoicing, is a highly diversified region of mountains, plateaus, and valley pockets. It reveals more clearly than any of the other areas the detritus of various waves of immigration and influence from other Otomí regions. Though widely separated from each other by distance, Tilapa and the typically devoicing NE dialects are situated, respectively, on the western and eastern escarpments of the central plateau, which has been the crossroads for the migration of innumerable Mexican peoples. Both the linguistic and geographical evidence suggest strongly that Tilapa and the NE dialects are offshoots of a single Otomí sub-group, probably originating in the east.

It is very rare indeed in primitive linguistics that we have a document such as the Cárceres grammar which takes us back nearly four centuries, and this lack of documentation is often regarded as an insuperable handicap for comparative work in nonliterate languages. But an ancient documentary source does not provide any direct solution of linguistic problems. It is merely

[15] See Soustelle, loc. cit., 223ff, who attempts to date the supposed change from voiceless to voiced stops as occurring between the middle of the 17th Century and the beginning of the 18th by a study of Cárceres, the Codex, and other later documents. Pedro de Cárceres, . . . la Arte de la Lengua Otomi, ed. by Nicolás Léon, Boletín del Instituto Bibliográfico Mexicano 6.43–155 (1907). Codex de Huichapan, manuscript in the Museo Nacional de Antropología e Historia, Mexico, D. F.

another source which may be used, if used critically and with reference to other types of evidence, for helping to solve such problems. Soustelle himself recognizes the faultiness of the Cárceres grammar, in which Otomí is not only confused with Latin, but with Spanish and Aztec as well. The transcription is crudely inconsistent, a given word being cited with a voiceless consonant, for example, on one page but with a voiced consonant later on. The Codex de Huichapan is an even more dubious linguistic source, and it bristles with problems of paleography. Historical evidence indicates that at the time Cárceres wrote his grammar the Otomí people were distributed very much as they are today. Their present distribution was effected at least two or three centuries before the time of Cárceres, under the pressure of Aztec expansion. No major realignment of dialects or dialect groups has taken place in the centuries since Cárceres' time.

Comparative evidence, then, shows that the distinction between voiced and voiceless stops goes back to Proto-Otomí times and beyond. Dialect evidence further indicates that this distinction is maintained in its original Proto-Otomí form in most of the present Otomí areas, but that in certain dialects, probably stemming from one region, the voiced stops are being unvoiced. The conclusion of all this regarding Cárceres is that his 16th Century grammar cannot possibly reflect any significantly archaic stage of the language, and that the forms he quotes probably represent different dialects plus a generous admixture of faulty transcription.

4.6. The problem of nasalized front vowels. The presence or absence of nasalization in Otomí vowels is the feature least consistently recorded in our raw data. Of the four nasalized vowels that have been reconstructed, *ą and *ų are supported by uniform correspondences; and these vowels occur with sufficient frequency to make their identification on a sound basis in each dialect. But the identification of the reflexes of *į and *ę, which are reconstructed from differentiated correspondences, is far from clear in certain dialects.

The evidence for *į is the least satisfactory among all the reconstructed Proto-Otomí phonemes. From the phonemic descriptions that we have, į occurs as a distinct phoneme in, at least, the NW and SW regions. In our own material the reconstruction of *į is based upon the correspondence between our two most trustworthy dialects, López Yepes (NW) and Temoaya (SW), in showing į-vowels in three cognates (119, 251, 314). Other dialects either provide no cognates in these cases or have cognates with an unnasalized i.

The much more frequent occurrence of *ę provides sound evidence for the identification of its correspondences in most of the dialects and for its reconstruction. But the reflexes of this vowel in Tilapa and Temoaya, two of our four SW dialects, are not clear. A bare majority of the forms reconstructed with *ę show a reflex of į in Tilapa, the remainder correlating with Tilapa ę or i. In Temoaya the reflexes of *ę are almost evenly divided between i and į. The selection of Tilapa į and Temoaya i as the correspondences of *ę is based upon material which shows an only slightly better than fifty-fifty distribution in that direction, and consequently these must be regarded as weakly supported correspondences.

4.70. Special phonological reflexes.

4.71. *hñ is Lop hy in all positions, contrary to the development of *ñ as Lop ñ initially (218, 219) but y medially (127): *hñą *breath*, Lop hyą; *hñųni *food*, Lop hyųni; *mbɛhñą *woman*, Lop bɛhyą. In Spab *hñ is reduced to ñ: *hñąto *eight*, Spab ñąto, Lop hyąto (see also 110).

4.72. *kh is h in all of our NW dialects except Lop: *khə *bean*, Tep Zim Tec hə; *khi

blood, Tep Zim Tec hi; *nikhą *church*, Zim nihą (see also 187). In these NW dialects the h (or j—Spanish jota) transcription of *kh may merely represent a velar fricative in place of the stop plus fricative usually recorded elsewhere. Various symbols intended to represent fricatives are also recorded for *ph and *th over the entire Otomí territory, but most frequently among the NW dialects. In fact, Sinclair and Pike list f, Θ, and x as distinct phonemes in the Otomí of several NW villages.[16] Whatever may be the descriptive treatment of these fricatives in a particular dialect, the comparative evidence is perfectly clear that the labial (or, in some transcriptions, labiodental) fricative and the dental fricative correspond to their correlative stops plus h in other dialects and must be reconstructed as *ph and *th. The fricative recording in these positions does not overlap other possible phonemes or phoneme clusters. But an overlapping results from the fact that the transcription in three of the NW dialects does not distinguish between the reflexes of *kh and *h, both being recorded with h or j indifferently. Although it is possible that *kh and *h may have fallen together in these NW dialects—and we have been forced by our data to assume that this is true—it is more likely that our transcriptions merely fail to distinguish two back fricatives. Sinclair and Pike list h, a weak velar fricative, as distinct phonemically from x, a stronger velar fricative.

4.73. *khw is hw in the NW dialects of Tep, Zim, and Tec but kw in the NE dialects of Spab and Sped and in the SW dialects of Til, Magú, and Spoc: *khwai *knife*, Tep Zim hwai, Spoc kwai; *khwa *maguey cloth*, Til Magú Spoc kwa (see also 329).

4.74. *gw is w in the NW dialects of Tep, Zim, and Tec and in the SW dialects of Spoc and Tem: *gwa *foot*, Tep Zim Tec Spoc wa, Tem wá; *nugwa *here*, Spoc nuwa, Tem núwá.

4.75. *ęi is į in Til and i in Spoc and Tem, having the same reflexes in these SW dialects as *ę: *hnęi *dance*, Spoc hni·, Tem hní; *t?ęi *corn-flour gruel*, Til t?į, Spoc t?i, Tem bót?í *a cereal of ground toasted corn* (bó- *black*) (see also 247).

4.76. In the SW dialect of Til only the first vowel is retained in the Proto-Otomí combinations of *VV or *VhV: *phəi *hat*, Til phə; *tɔi *market, to buy*, Til tɔ; *šųi *night*, Til šų; *goho *four*, Til ko; *kąhą *prickly pear*, Til ką; *thąhi *thread*, Til thą (see also 64, 190).

4.77. An h appears before an intervocalic *p, *t, *c, *k in the SW dialects of Til, Magú, and Tem: *c?apo *chicle*, Tem c?áhpó; *dɛti *lamb, cotton*, Til tɛhti, Tem déhtí; *šųci *girl*, Tem šųhcí; *šɛki *to break*, Til Magú šɛhki, Tem šéhkí (see also 2, 37). There is some evidence that this process may have had a wider distribution than it has at present. In the number words from six through nine, which are composed of special forms of the numerals one through four plus *-to, this h occurs before the medial t consistently in the SW dialect of Spoc and sporadically in the NE dialects of Spab and Sped. In addition to the number words, there are two other cognates in Spab which contain this intrusive h. These occurrences of h in Spoc and in the NE dialects must be assigned, of course, to the residue category, for there they do not illustrate a phonologically consistent reflex. But they suggest a wider orientation and probably an older history for this process, especially in view of the fact that a somewhat similar process—the occurrence of an intrusive h before intervocalic n—turns up in Mazahua.

4.80. Dialect relationships. If one were to draw isoglosses representing the thirteen

[16] Loc. cit., fn. 6.

differentiated correspondences, one would obtain a picture of the phonological relationships and cleavages within the Otomí territory.[17] Although such isoglosses do not consistently mark off any single area as a self-contained region, they show that the dialects within a given region are more closely interrelated among themselves than they are to any dialect outside of that region. This suggests that, though the various Otomí areas of the present day represent a complex patchwork of migrations and contacts, each region is a relatively coherent linguistic entity of long standing.

These isoglosses also indicate that the eastern regions, the NE dialects and the isolated Ixtenco dialect of the southeast, have fewer relationships between them than with the regions to the west; movements and contacts from the east must have been westward rather than in a north and south direction.

The western areas are more complex in their relationships. The NW region shows a greater number of similarities with the SW dialects than it does with either of the eastern area: the affinities of the NW region run southward more than eastward. Finally, the SW is the most complex of all areas in terms of dialect diversity within the region and of almost equally numerous lines of affiliation with all other regions. Its relationships are slightly stronger with the NW area than with the east, slightly stronger with the NE dialects than with Ixtenco in the southeast.

4.81. The major peculiarity of the NE dialects, as contrasted with all other regions, is the development of p, t, k for Proto-Otomí *b, *d, *g. This consonantic shift is partially reflected in Tilapa, a SW dialect, where *d and *g have become t and k in initial position. The NE dialects show a point of affinity with the SW dialects in their common retention of *ɔ, and with the NW dialects (except Tepenené) in their common retention of *ę.

4.82. Ixtenco is the most isolated of the Otomí dialects, forming a region of its own at a point almost due south of the NE area and due east of the SW area. Its geographical isolation is reflected in its correspondences, for in this latter respect it is the most divergent of the Otomí dialects. Its relationships point westward, primarily with the SW dialect of San Pablo Octupan and also with the NW area, especially with the Tepenené dialect, which is near the eastern border of the NW region.

4.83. The NW area has a wider extension but fewer geographical barriers than any other region. Linguistically it is the most cohesive of the regions, showing few differentiations among its dialects. Proto-Otomí *ɔ has fallen together with *a to become a in all the NW dialects, and nowhere else. All the dialects in the NW region also agree in maintaining *c and *s as distinct phonemes, but in fusing *b and *mb to an undifferentiated b; in these two features, however, the NW dialects resemble Magú and Temoaya, the two more northerly dialects of the SW area. The retention of *b, *d, *g as distinct from the voiceless stops again links all NW dialects to the SW area (excepting Tilapa, the southernmost dialect in this area) as well as to Ixtenco. Lesser points of similarity relate the NW region to the NE group (**4.81**) and to Ixtenco (**4.82**).

4.84. The SW area, a mountainous region containing the high sierras that form the eastern escarpment of the central plateau, shows greater diversity among its dialects than any other region. The Magú and

[17] For the differentiated correspondences, see the table in **4.4**. An attempt was made to work out lexical isoglosses for the Otomí dialects. But the dialects are so nearly uniform lexically that only about a dozen pairs of lexical items turned up which showed dialect cleavages. After eliminating the questionable items, only half that number was left. Insofar as any lines of relationship are revealed by our half-dozen acceptable lexical isoglosses plus those that could be drawn from the special phonological reflexes (**4.70–4.77**), they indicate the same trends of affinity as the isoglosses based upon differentiated correspondences.

Temoaya dialects have their strongest affiliations with the NW (**4.83**), much less with the NE, and very little with Ixtenco. The Tilapa dialect, below the city of Toluca in the southern part of this region, shows a closer relationship with the NE (**4.81**). The dialect of San Pablo Octupan, slightly north of Toluca, shows stronger affinities with Ixtenco (**4.82**): in both places *b has been retained and *mb has developed to m, while *c and *s have fallen together as c.

5. Reconstructions. The reconstructed forms listed below are arranged in the following alphabetical sequence: ʔ, a, ą, b, c, č, d, e, ę, ɛ, ə, g, h, i, į, k, m, n, ñ, o, ɔ, p, r, s, š, t, u, ų, ʌ, w, y, z.

A complete presentation of all the dialect forms for each of the 333 reconstructions would be too lengthy and unnecessarily detailed for the present paper. In order to provide a representative sampling of the evidence upon which the reconstructions are based, however, the dialect data will be given for the first two entries listed under each initial phoneme in the alphabetic series. In addition, the dialect evidence will also be presented for a few other entries which contain rare phonemes and clusters or show lexemes with a limited dialect distribution.

On one point—the occurrence of ʔ before an initial vowel or a voiced consonant—the reconstructions are based upon evidence from the more trustworthy recordings rather than upon consistent evidence from all dialects (see fn. 8).

The indications of tone and quantity that appear in our transcriptions are kept in the dialect forms but do not enter into the reconstructions. Tone is recorded only in the SW dialect of Temoaya (see **4.1**), where high tone is indicated by á, low tone by zero above the vowel, and rising tone by ǎ. Vowel quantity, shown by a·, is recorded sporadically in most of the dialects, but it shows no correspondence between the dialects nor does it correlate with any one of the Temoaya tones.

An initial n often occurs before d or g in certain entries as recorded in some dialects but not in others. Because we cannot be certain whether to consider this inconsistently recorded n in each case as a part of the morpheme, as a variable phonetic feature of the initial stop, or as one of the n- prefixes, we include it in the reconstructions as an indeterminate element, separated from the remainder of the form by a hyphen: *n-dąhi *wind, air* (190), *n-gʌde *skirt, petticoat* (205).

The abbreviations used in the following entries are explained in fn. 14. Dialect forms can be checked by consulting the correspondences (**4.3, 4.4**) and the special reflexes (**4.7**).

1. *ʔąhą *to sleep:* NE Spab ąhą; IXT ąhą; NW Tep Zim Tec Lop ąhą; SW Magú Spoc ąhą, Tem ʔą́há.

2. *ʔbɛto *grandchild:* NW Lop bɛto; SW Til ʔbɛhtu, Tem ʔbɛhtó.

3. *ʔęhę *to come.* 4. *ʔə *to hurt.* 5. *ʔi *chile.* 6. *ʔidą *woman's brother.* 7. *ʔiši *sour.* 8. *ʔmbaši *broom.* 9. *ʔna *one.* 10. *ʔño *companion.* 11. *ʔñų *road.* 12. *ʔñʌhʌ *man.* 13. *ʔopho *to write.* 14. *ʔotho *nothing.* 15. *ʔɔ *flea.* 16. *ʔrani *bridge.*

17. *ʔrok ʔa *potato:* NW Lop rok ʔa; SW Tem ʔrók ʔá.

18. *ʔuni *to give.* 19. *ʔų *salt.* 20. *ʔʌde *to hear.* 21. *ʔʌni *hen.* 22. *ʔʌtʔe *to do.* 23. *ʔwada *maguey.* 24. *ʔwąi *to rain.* 25. *ʔyɛ *rain.* 26. *ʔyɛ *hand, arm.* 27. *ʔyə *metate rolling pin.* 28. *ʔyə *root.* 29. *ʔyəga *neck.* 30. *ʔyəi *tobacco.* 31. *ʔyo *to walk.* 32. *ʔyo *dog.* 33. *ʔyo *reed.* 34. *ʔyophani *needle.* 35. *ʔyotʔi *dry.*

36. *ʔyʌthe *to cure:* NW Lop yʌthe; SW Magú Spoc yʌthe, Tem ʔyʌthe.

37. *bąci *child:* NE Sped pąci; NW Tep Zim Lop bąci; SW Magú Spoc bąhci, Tem bąhcí.

38. *bi- *3rd pers. subj. with verb preterite:* NE Spab pi-; IXT bi-; NW Tep Zim Lop bi-; SW Til Magú Spoc Tem bi-.

39. *bʌsną *lead* (metal).

40. *cʔə *tail:* NW Lop cʔə; SW Tem cʔə.

41. *cʔədi *pig:* NE Sped cʔʌti; NW Tep Zim cʔədi; SW Magú cʔədi.

42. *cʔi *teeth.* 43. *cʔo *bad, dirty.* 44. *cʔəni *avocado.* 45. *ca *to bite.* 46. *ca

woman's father-in-law. 47. *caphi *molars.* 48. *cąt?i *to burn.* 49. *cɛ *cold.* 50. *cə *to suck.* 51. *cədi *to obtain.* 52. *ci *to eat, to drink.* 53. *ci *small* (of animals and human beings). 54. *cibi *fire;* in composition *-spi, as in *dɛspi *live coals* (73), *mbospi *ashes* (see *mboi *black*, 176).

55. *cu (NE and IXT), *cų (SW) *female:* NE Spab suyo *female dog* (*?yo *dog*, 32), Sped cu *grandmother*, cumiši *female cat* (Aztec miš- *cat*); IXT cu *grandmother;* SW Til tącų *grandmother* (*dą *big*, 63), cų?yu *female dog*, Magú Spoc cuyo *female dog* (see also *šicu *woman*, 261; *ču, *čų *female*, 62).

56. *cʌ *to burn.* 57. *cʌ *star.* 58. *cʌhʌ *to arrive.*

59. *č?ə *little:* NE Spab čič?ə; IXT č?ʌ; SW Magú č?ə.

60. *čəni *eagle:* NW Tep Zim čəni; SW Magú čəni (see *šəni *eagle*, 257, the form attested from other dialects).

61. *čopho *to harvest:* NW Tep Zim čopho (see *šopho *to harvest*, 269, the form attested from other dialects).

62. *ču, *čų (NW) *female:* NW Tep Zim Tec čuyo *female dog*, Zim čųci *girl* (*ci *small*, 53), Lop čųčų *grandmother* (see *cu, *cų *female*, 55).

63. *dą *big:* NE Sped tąkų *rat* (*n-gų *rat*, 202), tąphani *deer* (*phani *horse, large animal*, 235); NW Tep dąyɛ *heavy shower* (*?ye *rain*, 25), Zim Tec Lop dąthe *river* (*-the, combining form of *dehe *water*, 64), Lop dąye *heavy shower;* SW Til tącų *grandmother* (*cu, *cų *female*, 55), Magú dą *big*, t?išųdą *eldest daughter* (*t?išų *daughter*, 286), Tem dąthé *river.*

64. *dehe *water;* in composition *-the, as in dąthe *river* (see *dą *big*, 63) and probably in *šanthe *sweat*, 249: NE Sped tehe; IXT dɛhɛ; NW Tec Lop dehe, Lop pathe *hot water* (*pa *heat, hot, day*, 226); SW Til te, Magú Spoc dehe, Tem déhé, páthé *hot water.*

65. *dę *forehead:* NE Spab tę; NW Tep dɛ, Lop dę; SW Magú dę, Spoc di, Tem dí.

66. *dɛ *sparrow hawk.* 67. *dɛmši *tomato.* 68. *dɛnši *onion.* 69. *dɛnthi *palm tree.*

70. *dɛnzų, *kid:* IXT dɛnzų; SW Spoc dɛnzų.

71. *dɛsɛ *wild cherry:* NE Spab Sped tɛsɛ; NW Tep Lop dɛsɛ; SW Magú dɛsɛ, Spoc dɛcɛ, Tem dɛsé.

72. *dɛsną *Aztec language:* NW Tep Zim dɛsną.

73. *dɛspi *live coals.* 74. *dɛthą *maize.* 75. *dɛti *lamb, cotton.* 76. *do *stone.* 77. *do?yo *earthenware pan for cooking maize cakes.* 78. *doni *egg.* 79. *də *eye.* 80. *dəci *spoon.* 81. *dų *to die* (secondary form). 82. *dʌ *old, big.* 83. *dʌni *flower.*

84. *gəto *nine:* NE Sped kʌhto; IXT gʌto; NW Tep Zim Lop gəto; SW Til kəhtu, Magú Spoc gəhto.

85. *gi- *water of:* IXT gido *tear* (*də *eye*, 79); NW Tep Zim Tec Lop gida *tear*, Lop gišpo *liquid soap* (šabo *soap* < Spanish jabón); SW Spoc gidə *tear.*

86. *goho *four.* 87. *gošti *entrance.* 88. *gəni *to snore.* 89. *gų *ear.* 90. *gųi *fog.* 91. *gwa *foot.*

92. *habə *where?:* NE Spab hapə; IXT habʌ; NW Tep Zim Tec Lop habə.

93. *hą *to carry inanimate object:* NW Lop hą; SW Tem há

94. *hą *yes.* 95. *hec?e *to sneeze.* 96. *hę *deep.* 97. *hęt?i *to spin thread.* 98. *hɛ?mi *paper.* 99. *həši *to whistle.* 100. *hi *man's paternal aunt.* 101. *hina *no.* 102. *hnęi *dance.* 103. *hnini *town.* 104. *hñą *breath.* 105. *hñą *speech, language;* probably the third form (see **4.2**) of the verb stem *ñą *to speak* (219). 106. *hñą *man's father-in-law.* 107. *hñąto *eight.* 108. *hñę *ravine.* 109. *hñęni *to get sick.*

110. *hñų *three:* NE Spab ñų, Sped hyų; IXT hyų; NW Tep Zim hñų, Lop hyų; SW Magú, hyų Spoc Tem hñų.

111. *hñųni *food.* 112. *ho *to kill.* 113. *honi *to search.* 114. *hɔi *earth.* 115. *hų *name.* 116. *hʌ- *step-relative*, as in *hʌme *stepmother* (*me *mother*, 177), *hʌta *stepfather* (*ta *father*, 289), *hʌt?ə *stepson* (*t?ə *son*, 285). 117. *hwa *wing.* 118. *hwą *fish.*

119. *hwąhį *maize land:* NW Tep Zim

Tec hwąhi, Lop hwąhį; SW Til hwą, Magú Spoc hwąhi, Tem hwą̈hį.

120. *hwɛ *daughter-in-law.* 121. *hwɛi *lightning.* 122. *hyadi *sun.* 123. *hyə *heavy.* 124. *k?a *horsefly:* NE Spab k?a; SW Til Spoc k?a.

125. *k?angi *blue, green:* NW Tep Zim Lop k?angi; SW Til Magú Tem k?angi.

126. *k?ašt?i *yellow.*

127. *k?ęną *snake:* NW Lop k?ęyą; SW Magú k?ęyą, Spoc k?iñą.

128. *k?ət?i *hiccough.* 129. *k?ohɔi *adobe.* 130. *kąhą *prickly pear.* 131. *kəhə *dye.* 132. *kəni *to grind.* 133. *kət?a *five.* 134. *kət?i *to enter.* 135. *kha *to be, to exist.* 136. *-khą *holy,* as in *mekhą *godmother* (*me *mother,* 177), *məkhą *priest* (187), *nikhą *church* (206), *takhą *godfather* (*ta *father,* 289). 137. *khądo *wall.* 138. *khąne *tongue.* 139. *khɛya *year.* 140. *khə *bean.* 141. *khəni *beard.* 142. *khəni *stone for grinding maize, maize dough.* 143. *khi *blood.* 144. *kho *nobody.* 145. *khoti *wall* (NE and IXT). 146. *khot?i *wall* (SW). 147. *khų *man's sister.* 148. *khųt?i *door.* 149. *khųt?i *to pay.* 150. *khʌde *skirt, petticoat.* 151. *khwa *rabbit.* 152. *khwa *maguey-fiber cloth.* 153. *khwai *knife.* 154. *khwąda *man's older brother.* 155. *khwɛ *woman's sister.* 156. *ko *man's brother-in-law.* 157. *kohi *to return.* 158. *kə *woman's mother-in-law.* 159. *kų *man's brother, man's younger brother.*

160. *ma *to go:* NE Spab ma; IXT ma; NW Tep Zim Tec Lop ma; SW Spoc ma, Tem mă.

161. *made *half:* NW Lop made; SW Tem madé.

162. *mahęc?i *sky.* 163. *mande *yesterday.* 164. *manša *ear of corn.* 165. *mańa *above.* 166. *maphi *to shout.* 167. *mą *to say.* 168. *mba *milk* 169. *mbada *pitcher.* 170. *mbe *loom.*

171. *mbeza *crate:* IXT mɛza; NW Zim Lop beza; SW Magú beza.

172. *mbɛhñą *woman* (NW and SW): NW Zim Tec bɛhñą, Lop bɛhyą; SW Magú bɛhña, Spoc mɛhñą (see *šicu *woman,* 261, the lexeme for NE and IXT).

173. *mbɛphi *to work:* NE Spab bɛphi; NW Tep Tec bɛphi; SW Til pɛphi, Tem bɛphí.

174. *mbɛpo *man's sister-in-law.* 175. *mbo *in, inside.* 176. *mboi *black;* in composition *mbo-, as in *mbospi *ashes* (*-spi, combining form of *cibi *fire,* 54). 177. *me *mother.* 178. *hmę *tortilla.* 179. *meše *spider.*

180. *męni *relative:* NW Lop męni; SW Tem miní.

181. *mɛhą *son-in-law.* 182. *mɛpha *after* 183. *mɛphi *peon,* the secondary form of the primary verb stem *mbɛphi *to work* (173). 184. *məi *belly, stomach, heart.* 185. *min?yo *coyote.* 186. *mohi *crock.*

187. *məkhą *priest:* IXT mokhą; NW Tep mahą, Lop makhą; SW Spoc məkhą, Tem məkhą́.

188. *mų *gourd.*

189. *nc?ə *bird,* occurring combined with c?i- in NE and NW, with c?ə- in SW: NE Sped c?inc?ʌ; IXT ncʌ; NW Tep Lop c?inc?ə; SW Magú Spoc c?ənc?ə, Tem c?ə̆nc?ə́.

190. *n-dąhi *wind, air:* IXT dąhi; NW Tep Lop ndąhi, Tec dąhi; SW Til ntą·, Magú dąhi, Spoc ndąhi.

191. *n-de *late.* 192. *n-do *hail.* 193. *n-do?yo *bone.* 194. *n-də *seed.* 195. *ne *mouth.* 196. *ne *to want, to like.* 197. *nęi *to dance.* 198. *n-gət?i *belt, girdle.* 199. *n-go *fiesta.* 200. *n-gəni *thunder.* 201. *-ngu *amount* with interrogatives, occurring in NE and NW hangu *how much?* (ha- probably as in *habə *where?* 92) and in SW tengu *how much?* (*te *what?* 291). 202. *n-gų *rat, mouse.* 203. *n-gų *house.*

204. *n-gʌ *meat:* IXT gʌ; NW Tep Zim Tec Lop ngʌ; SW Magú Spoc gʌ, Tem ngʌ́.

205. *n-gʌde *skirt, petticoat:* NE Sped kʌte; IXT gʌdɛ; NW Tec gʌde, Lop ngʌde; SW Magú ngʌde.

206. *nikhą *church:* NE Sped nikhą; IXT nikhą; NW Zim nihą, Lop nikhą; SW Spoc nikhą, Tem nı́khą́.

207. *nkhwąni *to confess.* 208. *noho *fat.* 209. *nšaha *to bathe.* 210. *nt?ęni *toys.* 211. *nthɛ *to meet,* 212. *nu-, a bound stem for

lexemes of substitution, used with pronominal suffixes to form independent pronouns and with the following place and time demonstratives. 213. *nugwa *here*. 214. *nuni *there*. 215. *nunə *there*. 216. *nupə *yonder*. 217. *nuya *now*.

218. *ñą *head:* IXT yą; NW Tep Lop ñą; SW Til Spoc ñą, Magú yą, Tem ñą́.

219. *ñą *to speak:* NE Spab ñą, Sped yą·; NW Tep Zim Lop ñą; SW Magú yą, Tem ñą́.

220. *ñąhmų *knee*. 221. *ñęi *doctor*. 222. *ñęte *conjurer, shaman*. 223. *ñəni *noise*. 224. *ñųdi *full*. 225. *ñųhų *Otomí language*.

226. *pa *heat, hot, day;* NE Spab Sped pa; IXT pa; NW Tep Zim Tec Lop pa; SW Til Magú Spoc pa, Tem pá.

227. *pada *buzzard:* NE Spab Sped pata; IXT pada; NW Tep Zim Tec Lop pada; SW Til Magú Spoc pada, Tem padá.

228. *pahni *shirt*. 229. *paši *to sweep, rubbish*. 230. *pądi *to know*. 231. *pąhą *to stink*. 232. *pe *to weave*. 233. *penc?ə *sparrow hawk*. 234. *peni *to wash clothes*. 235. *phani *horse*, apparently *large animal* in compounds: *phan-, first position combining form, as in *phanthʌ *deer* (*-thʌ, combining form of *t?ʌhʌ *mountain*, 288); -phani (NE, IXT, SW) and -phri (NW), second position combining form, as in *šiphani *hide, skin* (*ši *leaf, covering*, 259), *zaphani *forage, hay* (*za *tree, plant*, 328). 236. *phəi *hat*. 237. *phənc?i *to stumble*. 238. *pongi *to exceed*.

239. *pɔ *to sell:* NE Spab pɔ, Sped pɔ·; NW Tep Zim Tec Lop pa; SW Til Spoc pɔ, Tem pɔ́.

240. *pʌc?e *to ascend*. 241. *pʌni *to leave*.

242. *ra?yo *new:* NW Lop rayo; SW Tem ra?yo.

243. *rato *six:* NE Sped rato; IXT rato; NW Tep Zim Lop rato; SW Magú rahto, Tem ráhtó.

244. *rɛt?a *ten:* NW Tep Lop rɛt?a; SW Tem rét?á.

245. *rote *twenty*.

246. *saha *finger* (NE and NW Lop), *finger* and *fingernail* (NW Tep Zim Tec): NE Spab Sped saha; NW Tep Zim Tec Lop saha. For lexical differentiation between the dialects, compare this form with *šɔ *fingernail, finger* (270).

247. *sęi *pulque:* NE Spab Sped sęi; IXT cęi; NW Zim Tec Lop sęi; SW Magú sęi, Spoc ci.

248. *suni *nixtamal:* NE Spab Sped suni; IXT cuni; NW Tep Zim Tec suni; SW Spoc cuni.

249. *šanthe *sweat:* NW Lop šanthe; SW Tem šánthé.

250. *šanthʌ *mountain:* NE Spab šanthʌ; NW Tep šanthʌ.

251. *šąhį *maguey fiber:* NW Tep šąhi, Lop šąhį; SW Spoc šąhi, Tem šą́hį́.

252. *šąnt?ą *nopal*. 253. *šąza *cedar*. 254. *šɛdi *dust-storm*. 255. *šɛki *to break*. 256. *šəki *to wash oneself*.

257. *šəni *eagle:* IXT šʌni; NW Lop šəni; SW Til šə·ni (see *čəni *eagle*, 60, the form attested from other dialects).

258. *šətha *back, in back of*. 259. *ši *leaf*, and *covering* in compounds, as in *šidə *eyelid* (*də *eye*, 79), *šine lip (*ne *mouth*, 195), *šiphani *hide, skin* (*phani *horse*, 235). 260. *ši?yo *wool, blanket*.

261. *šicu *woman* (NE and IXT): NE Spab šisu, Sped šicu; IXT šicu (see *mbɛhñą *woman*, 172, the lexeme for NW and SW; see also *cu, *cų *female*, 55).

262. *šimo *cup*.

263. *šinči *lungs:* NW Zim šinči; SW Spoc šinči.

264. *šinthe *leg*. 265. *šiñų *nose*. 266. *šiphi *to tell*. 267. *šithę *shingle*. 268. *šɔki *to open*.

269. *šopho *to harvest:* NE Spab šopho; NW Lop šopho; SW Til šuphu, Spoc šopho, Tem šᵒphó (see *čopho *to harvest*, 61, the form attested from other dialects).

270. *šɔ *fingernail* (NE and NW Lop), *fingernail* and *finger* (IXT and SW): NE Spab Sped šɔ; IXT šo; NW Lop ša; SW Til Magú Spoc šɔ, Tem šɔ̃. For lexical differentiation between the dialects, compare this form with *saha *finger, fingernail* (246).

271. *šɔdi *to pray, to read.* 272. *štą *hair.* 273. *šųci *girl.* 274. *šųdi *morning.* 275. *šųi *night.* 276. *šʌcʔe *above.* 277. *šʌni *pitcher.*

278. *tʔabi *digging stick, plow:* NE Spab Sped tʔapi; IXT tʔabi; NW Tep Zim Tec Lop tʔabi; SW Til Spoc tʔabi, Tem tʔabí.

279. *tʔaphi *unfermented juice of maguey, honey:* NE Spab tʔaphi; IXT tʔaphi; NW Tep Zim Tec Lop tʔaphi; SW Til Magú Spoc tʔaphi, Tem tʔáphí.

280. *tʔaši *white, silver.* 281. *tʔąši *grasshopper.* 282. *tʔęi *corn-flour gruel.* 283. *tʔɛgi *metal, bell.* 284. *tʔɛšə *sickle.* 285. *tʔə *son.* 286. *tʔišų *daughter.* 287. *tʔo *louse.* 288. *tʔʌhʌ *mountain, hill;* in composition *-thʌ, as in *phanthʌ *deer* (*phani *horse, large animal,* 235). 289. *ta *father.* 290. *tą *to ripen.* 291. *te *what?* 292. *tədi *torch pine.* 293. *təmə *butterfly.* 294. *thą *ear of corn.* 295. *thądi *to answer.* 296. *thąhį *thread.* 297. *thątʔi *to tie.* 298. *thąti *to marry.* 299. *the *a chalky rock.* 300. *thebe *necklace.* 301. *thede *to laugh.* 302. *thehe *a cold.* 303. *thędi *tamale.* 304. *thęñą *charcoal.* 305. *thɛni *red.* 306. *thi *outside.* 307. *thogi *to enter.* 308. *thoni *to touch.* 309. *thųhmę *bread.* 310. *thųhų *name.* 311. *thųhni *bench.* 312. *tihi *to run.* 313. *tiñą *breast.*

314. *tį *drunk:* NW Zim ti, Lop tį; SW Tem tí.

315. *to *man's mother-in-law.* 316. *tɔgi *to fall down.* 317. *tɔi *to buy, market.* 318. *tų *to plant maize.* 319. *tųhų *to sing.*

320. *wɛ *frog:* NW Lop wɛ; SW Tem wé.

321. *-wi, associative 1st and 2nd persons (perhaps basically dual in number, for it occurs as plural in those dialects which have lost the dual): NE Spab nugwi 1st pers. dual (nukɔ 1st pers. sing.); IXT nuguwi 1st pers. dual (nuga 1st pers. sing.), nukʔʌwi 2nd pers. dual (nukʔi 2nd pers. sing.); NW Lop nuiwi 2nd pers. plu. (nui 2nd pers. sing.), ñowi *to accompany* (*ʔño *companion,* 10); SW Tem nugǒwí 1st pers. plu. incl. (nugǒ 1st pers. sing.), nukʔéwí 2nd pers. plu. (nukʔé 2nd pers. sing.), nthɛwí *to meet* (*nthɛ *to meet,* 211).

322. *yaphi *person who extracts the juice of the maguey:* NE Sped yaphi; IXT yaphi; NW Tep Zim Tec Lop yaphi; SW Til Magú Spoc yaphi.

323. *yəni *to be fragrant:* NW Lop yəni; SW Tem yəní.

324. *yəni *elbow.* 325. *yo *candle.* 326. *yoho *two.* 327. *yoto *seven.*

328. *za *tree, stick,* in composition *plant:* NE Spab za, Sped za·; IXT za; NW Tep Tec Lop za, Zim za·; SW Til za·, Magú Spoc za, Tem zá.

329. *zakhwa *pig:* NW Lop zakhwa; SW Spoc zakwa, Tem zákhwá.

330. *zatɛ *jaguar.* 331. *zątą *moon, month.* 332. *zɛngwa *to greet.* 333. *zəpa *monkey.*

MISKITO GLOSSARY, WITH ETHNOGRAPHIC COMMENTARY

G. R. HEATH

BETHLEHEM, PENNSYLVANIA

1. Introduction [by Glen Turner, Indiana University]
1.0. Basis of selection from the Heath manuscript
1.1. Mískito sounds
1.2. English definition
1.3. Genus and species
1.4. Non-English definitions
1.5. Ethnographic commentary
1.6. Heath's acknowledgments
2. Extracts from Heath's lexicon

1.0. From the Reverend G. R. Heath's Mískito Lexicon, completed in 1947 in 510 manuscript pages, we have extracted terms of flora and fauna, including many medicinal terms, especially of plants used for curing; items from Mískito folklore and social organization; and some other terms. Some entries are little essays, as that under pa·sa which distinguishes between cardinal directions oriented by heavenly bodies and cardinal directions otherwise oriented; so also, under ka·ti·, the Mískito calendrical system is given; compare also the entries pyu·ta saika and miskito. Other entries are briefer but are, in all cases, selected because they include ethnographic commentary. The remaining entries included in Heath's manuscript (but not in this paper) consist mainly of a Mískito-English glossary, without ethnographic comment.

1.1. Mískito sounds. The consonants are p, t, k, b, d, g, m, n, ŋ, l, r, w, h, y; the vowels are i, e, a, o, u, plus length on all vowels written with a raised dot diacritic. Short i and short u always combine with a preceding short a to form the short diphthongs ai and au respectively. Long diphthongs occur in Mískito but are not encountered in these extracts. The sign ŋ has been used consistently in place of the author's ng. Lower case has been used for all entries and most meanings. The alternant sign (∽) has been used to show more than one word or expression with a single, following meaning. All entries are in alphabetical order; however long vowels are treated as a single two-mora vowel.

1.2. The English definition is given in italics immediately following the Mískito entry; ethnographic commentary is printed in roman.

1.3. The genus and species of the flora and fauna terms are printed in italics after the English definition whenever they are given in the manuscript lexicon.

1.4. Non-English definitions are given in parentheses, the definition appearing in italics with the following abbreviations in roman: Sp. for Spanish, Cr. for Creole, Ca. for Carib, Hon. for Honduras, Waŋks or Wŋk. for Wangks, and Lad. for the Ladinos.

1.5. Ethnographic commentary is in roman. If neither the genus-species name nor the non-English definition is included, the commentary will follow the English definition italics. Some alternate definitions in the manuscript have been omitted when to have included them would have involved giving extra explanations, as. cross references to words outside the scope of this paper. However cross reference entries have been included where possible. For all musical portions the Italian-Spanish fixed do scale is used. Some of these commentaries have been enlarged upon from information given by Heath in his introduction. Consideration of style has necessitated some rearrangement of order; all changes were made to

comply with the style of this journal. Thus a minimum of punctuation has been used.

1.6. The occasional names in parentheses at the end of an entry refer to persons to whom Heath gives credit for the meaning which, however, he has independently checked in all cases. The abbreviation Z. is for Ziock, the rest of the names are written in full. A few final parentheses give abbreviated names of places where certain localisms originate.

2. Extracts from Heath's lexicon.

aibakaia kwa·la *former clothing of Indian women* consisting of a towel-shaped piece of bark cloth or cotton cloth wrapped around the loins and tucked in over the hips.

aikabaia takaskaia saika *anti-emetic.* Normal salt solution, 80 grains—one level teaspoonful—to one American pint of 16 fluid ounces, is a very efficient anti-emetic. Give one teaspoonful of the solution every five minutes or when nausea comes on.

aimapaya *the double star Theta Tauri*, twin points of light west of Aldebaran, said in Mískito mythology to be the human pair, a man and his sister, who escaped the universal deluge. Aldebaran is their hearth fire. These stars are not Castor and Pollux but being the only twin stars known to Mískito astronomy were put in place of the Dioscuri in Acts 28:11.

akak (1) *yellow hornet*; (2) *a species of lizard* ugly and poisonous with suckers under its feet and a sting in its tail which readily breaks off. It croaks aak aak.

a·ksma *an infection of the foot* said to be caught in muddy places, little blisters coalescing and spreading causing swelling. Cured by bathing foot in decoction of sauru *bayvine* leaves or of granadilla leaves or by applying the bruised leaves.

a·ksuk *species of nocturnal mammal* (Sp. *cuatro ojos*) with soft reddish fur and curved claws, body about 9 inches long; said to eat chickens.

alipi·na *water-hyacinth* also called klukum pata, palpa pata, and very commonly on the Waŋki River called ko·lman taŋni after the Cornishman Charles Coleman who is incorrectly said to have first introduced it to that river. It is good food for cattle and may be used raw or cooked by humans.

alwoni *the thunder spirit* by some considered the chief divinity.

antaman (1) *species of bluish wasp* living in the ground; stings very badly but only when stepped on. Attacks and eats spiders. (2) *hunter man*, an English loan word used in Honduras for a man who hunts for mahogany trees, rubber trees, or food for forest camps.

asaŋ *hilly land covered with forest.* In the Sumu country all the forest is hilly but the word itself seems to really mean *forest.* In Mískito the emphasis seems to be on the elevation above the surrounding country. Thus in Sandy Bay which is flat insla asaŋra daukaia means *to make plantation* in the bush lands on the very slightly elevated ridges near the villages (R. F. Bishop).

asaŋbushna *burnt hill*, Sumu name of a mountain on the Butuk or Patuca River said by the Indians to be a volcano. More recent explorers insist that it has no crater and suggest that the fires observed may have been due to natural gas.

asido·ra *very tiny grass tick* bright scarlet or pingwing red. Called *grass louse* in Nicaragua and Honduras, *potato louse* in Jamaica, *bête rouge* in some other West Indian islands. Kerosene or quassia infusion applied to the legs keeps them off; Epsom salt solution, an ounce to a quart, allays the severe itching of their bites.

auas *the pine tree and its wood; pine torch; Pinus oocarpa* (Sp. *pino*, *ocote*). This long leaf pine is the only species found in the Mískito country. It is the national tree of Honduras.

auaspi· *species of tree*, not a conifer, with small leaves and small whitish flowers. Its wood burns like pine but it is too valuable to burn as it resembles cypress in colour, texture and durability. Found only inland.

aubiya *the great spirit of the air;* literally *the one who draws* the winds. Said to live on the summit of Yalok or some other high mountain; by some considered to be the chief of the Mískito divinities.

auka *species of tall tree, Tecoma* (Sp. *cortez*) with a little yellow sap wood but mainly very hard, durable, greenish-black, smooth wood which breaks axes but can readily be sawn. The bright golden yellow trumpet shaped flowers appear in profusion in February and May. Decoction of the bark reported to relieve inflammations of the spleen and liver and to cure dysentery. Appears to contain berberine.

auya saika (1) *species of bitter weed* (Cr. *madame complaise*) growing on river beaches in the dry season. It is a strongly griping purge said afterwards to sedate the whole body giving sense of well being. (2) same as kaŋbaia, which see (Sp. *santa marta*).

awalwas ∽ awolwas (1) *name of a tributary of the Upper Wayks;* (2) *name of a mountain near the tributary* said by the Indians to be volcanic and a rival of asaŋbusna at which it throws stones. Meaning of Sumu awol unknown.

awaŋ *species of large tree* the bark of which, given in decoction, is a violent emetocathartic. The name Aguan for the river also known as Roman River is almost certainly a Spanish corruption of awaŋ. In former times the Mískitos claimed its mouth along the beach as the western boundary of their kingdom but they never lived west of the Río Negro.

almuk a·wra *a legendary person* very rarely spoken of who came from over the sea, apparently corresponding to Balam Votán of Yucatán.

a·yalila *species of bird,* excellent songster; main colour a brown sepia, the feathers trimmed at points with bright brown, breast light brown. Calls ka·t ka·t and kirr kirr, male sometimes kakakak. The chief of its melodies is mi-do-mi-do-mi-do-mi-do-'sol-'la , trilled and with variations.

ba·diltuk *name of a tributary of the Ras River, auriferous.* Miners ignorant of Indian corrupted the name to Bottle Two and government officials wrote in their documents Dos Botellas. The name is believed by the Payas to be of Sumu origin.

balyanta ∽ balyanta ta·wa *a variety of sweet potato* with purple flesh and skin and partly purple vine and leaves originally brought from the land of the Guaimi (Valiente, Balyanta) Indians in Panamá. It turns ultramarine blue in the mouth.

basala *a species of stout, three cornered vine, Serjania inebrians,* used to kill or stupefy fish by whipping the water behind a dam in a stream. Also, powdered with guaco, mukula, ginger and garlic, an ingredient of a favorite remedy for snake bite. Spanish *barbasco* but this name is given to several plants and strictly means mullein; basala is not mullein.

bisbaia *stench, stink, anything with a foul smell.* Used for bananas or plantains crushed and wrapped in waha leaves, buried in the ground, left to decompose and then eaten as a delicacy.

bra· (1) *close friend* something like libra. (2) *flute, musical pipe.* The Mískito flute was made from a small species of bamboo and had five notes approximately si to fa in the Spanish scale. Apparently different men's flutes could be recognized by a difference in pitch or tone as in the story of Naklili.

bru·s *name of a large lagoon* in Honduras and of the village on its southern shore; a corruption of Brewers. The lagoon was formerly known as Brewer's Lagoon from the pirate Bloody Brewer who lived on the hilly Cannon Island in the west part of the lagoon.

busuk *a word imitating the sound of something plunging into water.* Hence the following.

busukra *a watery swamp with thick growth of grass and weeds; a tangled growth of matted grass* fairly firm but easy to slip through into water underneath.

dar *species of climbing plant* which is said to creak with the sound of dar-r-r as it

swings to and fro. In the legend of the Wiswis said to have the property of rendering invisible any object or person tied with it.

dwarwa (1) *the jumbie-bead and its vine, Abrus precatorius,* miscalled by the Creoles licorice. The word jumble-bead of the dictionaries surely rests on a misunderstanding. This seed stands in superstitious connection with the jumbies, disembodied spirits or demons, of the Eastern Caribbean. (2) In Waŋki said to be the same as wislu·.

gwa·ko· *guaco,* name of several varieties of *Aristolochia,* especially *A. guaco* or *anguicida.* Also a low tree with a bitter bark used as an anti-malarial. For snake bite take about four inches of the thick guaco vine, chip it finely and boil in a pint of water. Give half a cupful every half hour. Improved by combining with kuntri·bo·. Local treatment is also needed.

i·bo· *species of gigantic tree* with huge spurs or buttresses and very hard wood something like rosewood and resistent to axes; not found north of the Awoltara nor south of the Río San Juan. It is covered with pink blossoms in February and bears fruit containing a sweetish edible pulp and a very hard seed or nut the inside flesh of which is also edible and wholesome but is chiefly used for making a valuable oil.

ihiri *species of woody plant,* aroid, growing in water or swamps. Fruit is very large, compound; when ripe the flesh of each drupel shrivels but the seed when properly cooked is wholesome resembling potatoes. The spadix of the flower is sometimes called chichi banana.

itikmuk *species of termite* (Cr. *duck-ant*) which bores into wood and eats it from inside. Also called usra pi·ni·. Painting the wood with a solution of copper sulphate, 1 part in 256, is said to give good protection. The ground around a post should also be treated.

kakamuk ki·wka *species of vine* with milky juice and small succulent leaves. When boiled it becomes tough and is used to tie thatch leaves.

ka·kmapara (1) *a hole* dug by running water at the base of a small precipice, considered, according to Ziock, to be the lurking place of an evil spirit but more likely of the ka·kmapara snake. (2) *a mythical snake or worm* the bite of which is supposed to cause a painful rheumatic swelling. (3) *the swelling* supposed to result from such a bite but which is often gonorrhoeal arthritis.

kaŋbaia *button weed, Borreria osmoides* or *laevis.* (Sp. *santa marta*), a species of slender weed with tiny, pure white, cruciform flowers sometimes also called auya saika. The liquid obtained by maceration in cold water is used to wash sand out of the eye. It is also given internally for snake bite, the pounded leaves being applied to the bite as well. The leaves are also pounded and applied to the head to relieve headache. The infusion or decoction especially of the root is given for uterine pains.

karswaki *name used to frighten children,* supposed to be a cannibal demon or man.

ka·ti· *moon; lunar month.* Hence the following: holide· ka·ti· ∽ alide· ka·ti· *holiday moon,* first month in the new year beginning in the Christmas holidays which were often unduly prolonged,—hence roughly January. kuswa ka·ti· *tortoise moon,* second month, when the tortoise lays eggs.—February. islu· ka·ti· *lizard moon,* second month, when the large green lizard lays eggs,—latter part of February and early March. This term is not in common use. kakamuk ka·ti· *iguana moon,* third month, when the iguana lays eggs,—March. wli waintka ka·ti· *turtle moon,* fourth month, moon of the male turtle,—April. wli mairin ka·ti· *female turtle moon,* fifth month,—May. In Honduras called lagrit ka·ti· *logger-head turtle moon.* tisba ka·ti· *breadnut moon,* sixth month, when breadnuts are ripe,—part of May and part of June. li· ka·ti· *rain moon,* seventh month, when in Nicaragua the season of heavy rains begins,—June. In Honduras where the greater rainy season begins in November this moon is called swa· ka·ti· *cedar moon,* when the fruit of the bastard cedar ripens.

pasta·ra ka·ti· *wind moon*, eighth month, when in Nicaragua the wind is most fierce,—July. sikla ka·ti· *sikla bird moon*, ninth month,—August. In Honduras where the sikla is not known it is called wi·s si·rpi· ka·ti· *little wi·s moon*. wi·s ka·ti· *wi·s moon*, tenth month, when the wi·s birds arrive,—September. pra·ri· ka·ti· *hurricane moon*, eleventh month, when most Nicaraguan hurricanes have occurred,—October. At present people dislike this name and say saut ka·ti· *south-west wind moon*, but in Honduras the wind of that time is mostly due south and there saut means *south-east*. ya·bra ka·ti· *north wind moon*, twelfth month, when the northerly wind storms usually set in,—November. In Honduras these storms are far more severe and ya·bra is *north-west*. This is the beginning of the rainy season of Honduras. kristmas ka·ti· ∽ krismas ka·ti· *Christmas moon*, thirteenth month, normally including the Christmas festival—December. These moons do not form a strict calendar and there is no means of adjusting the lunar year to the solar. The attempt to make the names correspond to English or Spanish names is commonly misunderstood but has been followed for letter writing by those who have a little education.

katski *the lagoon and bar*, or entrance from the sea, of Caratasca. Also a small settlement north-west of the entrance. Formerly also a hamlet on the beach some miles to the south-east, now abandoned. The mouth of the lagoon leading to the bar is one mile square. On the south-east side is an island formed by the two mouths of a small stream. This is reputed to have been the centre of an ill-fated colonisation attempt by the Scotsman Gregor Macgregor about 1840. From that time the island was known as Scot's key which name in accordance with Mískito phonic laws became katski sometimes lengthened into kataski. Others claim that kataski is short for ka·rata·ski meaning *dirty silk-grass* and was changed by the Spaniards into Caratasca but the Spaniards originally called the lagoon Cartago.

ke·p *name of the town on the Cabo Gracias Lagoon* formerly the central point of the Cape district. The southern part of it is Pullingtown, puliŋtaun, the northern si· tawa·la ∽ si·tawola. The Indians named the whole village complex ke·p without knowing what the word meant. When a town was built in 1904 at the true cape the Indians called this waŋkibar and continued to give the name ke·p to the old town, now officially in Spanish Cabo Viejo. This official name is sometimes reproduced as ke·p almuk. The geography of the whole district has become confused by the shifting of the mouths of the Waŋks. The island of San Pío, famous in political negotiations has long ceased to exist as such. Waŋkibar was totally destroyed by the hurricane of 1941 and has been abandoned.

ki·sauri *species of coriander*, *Eryngium* (Sp. *culantro*, Cr. *fits-bush*). A tea made of the whole plant and drunk frequently for many weeks controls epilepsy.

ki·su· *species of slender palm* with large leaves and long spines, bearing clusters of round fruit each containing a little white jelly and a large seed. From the seed is extracted a valuable oil now not common.

knu· *the spider lily*, *Pancratium* usually pure white but in the larger variety tinged with orange. Grows wild in water but bears transplanting to dry land well. The bulb is a drastic emeto-cathartic but in small doses may be used in the same way as squill.

kouna·pa *a mountain* on the left bank of the Butuk or Patuka River some distance below the mouth of the Wanpo, said in Sumu legend to have been the home of maisahana *our begetter* and his wife itwana *mother*, the ancestors of all the Mískito and Sumu tribes.

kra·bo· *species of tree*, *Byrsonima crassifolia*, (Sp. *nancé*) yielding excellent firewood; an astringent bark a decoction of which is used to cure dysentery; very sour cherry-like yellow berries which are preserved by bottling in cold water. May then be eaten

raw or boiled with sugar. Favourite food of hogs, very fattening.

kubus *native hearth* built by putting sand or earth into a box on legs or even on a platform of bamboo resting on poles supported by forked sticks. Also an oven. In Honduras *a clay stove* made in the manner of the Caribs.

ku·ku a·wrika *drifting coconut;* term applied deridingly to foreigners.

kuntri·bo· *a bitter vine, Aristolochia trilobata,* smelling like soursop leaves, very important remedy for snake bite, smallpox, malaria, and dysentery. Dose: three leaves or as for gwa·ko·.

laimus damni *bergamot,* a large navel lemon with whitish rather tasteless flesh but cooling juice. The exceedingly fragrant rind is useful either chopped or gratered for making preserves and for manufacturing perfumes.

laka *the tropical locust tree or carob tree, Hymenaea courbaril,* (Sp. *algarroba, guapinol*). Decoction of bark, half an ounce to the pint of water, used by Indians for dysentery, by Ladinos for swollen spleen.

lalma *at a right angle to the shore;* hence on the Nicaraguan Atlantic coast, east; in Honduras, north-east or north; on a river, towards the middle. To designate true east one hears yu· mi·na *sunrising.*

la·pia ∽ la·pya *a friend* called in at the birth of a child to sever the navel cord. This friend afterwards has somewhat the same relationship to the child as a god-parent and to the child's parents as a libra.

li· la·mia *water tiger* said to be a web-footed tiger, living in the water, able to attack and eat a horse but considered by foreigners to be fabulous. Years ago a reward was offered for the skin and feet but was never claimed.

libra *covenant friend.* Always of the same sex. Certain harmless ceremonies are observed in making the covenant.

lilka *likeness, image, shadow, spirit.* It is not quite clear which is the original meaning, for the human spirit is considered to be a miniature facsimile, about three inches long, of the body. Formerly the word was also used for the Holy Spirit of God but this led to so much confusion that it has been abandoned in favor of spirit ∽ pirit, a word greatly preferred by the Indians themselves.

limsi *West Indian red birch, turpentine tree, Elaphrium simaruba,* not a true birch. Infusion of leaves excellent for cough even in phthisis. Bark often used to make tea said to purify the blood. Honduran writers recommend bark internally and externally for snake bite.

li·wa (1) *worm, grub, caterpillar, starfish.* (2) *the evil spirit living in the water* sometimes considered as one, li·wa, sometimes as many, li·wa nani, but the plural may refer to the subordinate spirits serving the great li·wa. Ziock also gives *mermaid* but this looks like a Creole identification from the West Indies. Li·wa was said to have lived in the great whirlpool at Namakalmuk on the Upper Waŋks and to have killed all but one of the Sumu crew of a river canoe. Another li·wa was said to live in the great shallow in the south-eastern part of the Caratasca Lagoon and to draw boats under, drowning the occupants. Li·wa were said to be white and to have a ship under water in deep places, themselves living in the cabin.

li·wamukya *species of tree* with very soft wood and large golden yellow saucer shaped flowers. In Honduras called karskwaya. Used for living fence posts. The West Indian variety with double flowers and no fruit is not found in the Mískito country.

li·watiskla *a star in the south-east,* identity now forgotten, almost certainly the constellation Scorpio; hence *the south-east or east-south-east wind.* In Kruta li·watiskla is the time near Christmas when many wild animals as the deer are supposed to walk about more freely. Scorpio reappears a few days before Christmas, rising just before the sun; hence Antares is called kristmas.

lu·pa taŋni (1) *beautiful species of orchid* used as medicine to cause fertility of women. (2) *a variety of orchid* (Sp. *vaca*) much prized,

found near Bocay and in other inland parts. (3) *a cane-like plant* with short, succulent, hairy leaves and large ginger-like flowers growing in whorls. The juice of the stem is sour; sucked freely it is said to be a remedy for gonorrhoea.

lu·palila *species of lizard* very tame. It is considered an omen of conception for it to creep on a woman's dress.

mairin albika *woman's slave*, formerly said in derision of a man assisting his wife in her work.

ma·ŋgo· *mango tree and fruit*. Most parts of this tree are useful in medicine. The decoction of the bark of old trees, especially the outer bark, besides being mildly antiseptic and gently astringent, is a febrifuge and anti-malarial claimed by some to excel cinchona. In a single dose of half a pint it is a hydragogue cathartic. Equally good against dysentery; boil one ounce in 16 fluid ounces of water. Infusion of leaves, handful to a pint, is a good mouth wash which promptly stops the diarrhoea of teething. The kernels of the fruit, cleaned, ground, and boiled with an equal quantity of water, then strained, are said to be excellent against dysentery and a good vermifuge. May be reboiled with two parts sugar to make syrup. The resinous exudation is used by some to cure old sores and even gonorrhoea.

matsiksa *the large black king snake* which has a whitish or yellow throat and kills and eats poisonous snakes, also rats; sometimes eats eggs. The story that it whips certain persons with its tail lacks reliable evidence.

miskito ∽ miskuto *the name of the principal Indian tribe of what is now eastern Nicaragua and north-eastern Honduras*. The territory occupied by them extended from the mouth of the Black River to the southern extremity of the Pearl Lagoon but they claimed sovereignty as far west as the mouth of the Roman River or Aguán, awaŋ, and as far south as Greytown or San Juan del Norte. There seems to be no evidence for the claim of Charles Algernon Hodgson and others that some of them inhabited the region between the Pearl Lagoon and Greytown and were wiped out by smallpox. The scattered Indians that lived there were probably of the Rama race. The Mískitos did establish a certain measure of supremacy over various points of the Costa Rican coast and over the region of Bocas del Toro in Panamá by means of piratical expeditions.

The origin of the name Mískito is quite uncertain. The country was known as the Mosquito Shore and the Mosquito Coast. Writers both German and English of the nineteenth century strenuously assert that Mosquito is a corruption of Mískito. But these writers did not know the whole country. A very short distance inland from the sea or from any lagoon there begins a belt of swampy land where the mosquitoes are numerous enough and fierce enough to kill a naked helpless man in one night. Moreover the word mosquito originally meant any kind of small fly and in Honduran Spanish today means the cruel bottle-fly, our mosquito being termed zancudo. What with all the various species now called mosquitoes in English added to the numerous sandflies, bottle-flies, black or yellow or red doctor-flies or short-jackets, gadflies, and other similar pests it would be no wonder if early explorers who came to Honduras first may have called the whole region a mosquito country. Various Spanish writers use the term Mosco Indians. The people now-a-days do say yaŋ nani miskito nani *we Mískitos* but more idiomatically refer to themselves as upla aiŋwa *true humans*. There seems to be no evidence that the word miskito was known as a tribal name before the name Mosquito Shore was in use. Some think the original tribal name was waikna. At the present day the so-called pure Mískito Indian does not exist. Some say that he never did but that the apparently purer types were descendants of the Prinsu and Bawihka Sumus who adopted the Mískito language. There have been Mískito-speaking Twahka or Panamaka Sumus on the Waŋks and also, it is claimed, in Auka. Edward Conzemius

on page 17 of his Ethnographical Survey of the Mískito and Sumu Indians of Honduras and Nicaragua considered that the Mískitos originated from the intermarriage of Bawihka Sumus with shipwrecked African slaves.

The form miskuto is heard only in Tawira villages near the sea coast where the inhabitants call themselves miskuto aiŋwa *true Mískitos*, though very obviously of partly African descent, and give the people further inland the name of Tawira. The Waŋki Mískitos call all those near the sea coast ta·wira and both groups call those of Honduras ma·m. Among the baldam nani the element of African descent is frankly acknowledged. All Mískitos are called by the Sumus weiya, by the Ramas pakba, by the Caribs idudu, by the Payas ku·ma·-ha, by Bay Islanders waika, and by Spanish people zambos.

The Mískito language is spoken in the lowlands of Nicaragua and Honduras from Pearl Lagoon in the south to the Black River in the north-west and as far inland as the region of Bocay on the Wangks River or Río Coco. Three principal dialects are found: the Ta·wira from Pearl Lagoon to Bemuna, the Waŋki on the Wangks River, and the Honduran Mískito, often called Ma·m.

mukula *the so-called antidote bean and the vine that bears it, Fevilea cordifolia,* (Sp. *chichimora*), not a bean. The flesh of the seed, cream coloured and very bitter when fresh, cures rheumatism and haemorrhoids; an ingredient of a well known snake bite remedy.

musukra *a smooth, light-coloured worm* that leaves a secretion where it walks causing sores on skin if touched.

na·klili *name of a legendary hero* who followed his wife's soul to the land of the dead and returned.

na·kra kalkan uplika *an enlightened person.* The enlightening is sometimes administered by gently striking the eyes with a small switch.

namakalmuk ∽ panamaka almuk *a cliff on the Waŋks* above Kriŋkriŋya where the river makes a very sharp bend causing a whirlpool. Said to have been the home of a dangerous demon, perhaps identical with li·wa, which see, until a sukya drove it away by burning an alligator on the gravelly beach of Karsaŋkan.

napinapi *name used to frighten children* supposed to be a cannibal demon or man.

no·aia du·sa *species of tree* something like silk-cotton with very soft wood. The bark is used as medicine for bathing children to make them grow.

o·hum *hone palm, Elais melanococca,* with short stem, long leaves, and bunches of small red fruit. In times of scarcity the flesh of the fruit or the pith of the trunk is pounded in the mortar and from it is made a drink which has some nourishment. From the kernels two kinds of oil or fat are made: one brown, good for the hair, called miskito batana; one clear, miscalled ki·su· ma· batana. Both make good soap with lye.

o·kuli *one who has been struck by lightning and recovered* and has thus become a pa·sa yapti *controller of wind* able also to exert a magic influence over plantations, ensuring good crops. There can only be one o·kuli at a time. He is not a sukya *shaman* but a higher medium. See pa·sa yapti.

orus wamba ∽ dus alkaika puspusira *a parasitic plant* apparently a polypodium; its infusion, almost tasteless, cures malarial spleen.

pakatpakat *species of small black teal* named from their beating of feet on water when beginning their flight.

palpa kwarka *species of tree* with little purple fruits which dye cloth splendedly but colour washes out.

pankalkal *species of ash tree,* the prickly yellow. Splits easily when freshly cut. Decoction of bark given internally said to cure persistent bleeding after snake bite.

pa·sa *wind, breeze.* In Mískito there are no points of the compass determined by any fixed point in the sky except as noted below. Standing on the shore facing the water in front is lalma, to the left is ya·bra, to the

right waupasa, behind being muna. In Nicaragua where the coast line runs more or less north and south the naming of directions and winds is fairly constant. Between Cabo Gracias and Punta Patuca (Butukamaya) all the points shift forty-five degrees more or less; from Butukamaya to Tocomacho about forty-five more; while at Iriona ya·bra is actually south-west. Yet in Honduras, apparently because the Mískitos of those parts came originally from what is now Nicaragua and still thought of the sun rising in the lalma, people from Cabo Gracias and beyond are still referred to as lalma wina *from the east.* Three points are invariable because fixed by the rising of the heavenly bodies: yu· mi·na *foot of the sun, point where the sun rises, east;* u·hki· ∽ u·hki· mi·na *point where the Great Bear or Dipper rises, north-east;* li·watiskla ∽ li·watiskla mi·na *point where Scorpion rises, south-east.*

pa·sa yapti *mother of wind,* one of either sex, usually if not always a man, who claims power to control hurricanes and is also called o·kuli. It may be possible that pa·sa yapti is really the name of a spirit of high rank whom this medium claims to represent. Compare in Mexican mythology the wife of Tlaloc, god of rain. It is not clear whether in these days a pa·sa yapti claims to be a servant of li·wa, the water god, or of alwoni, the thunder god. There can be only one pa·sa yapti (o·kuli) at a time. The last three lived at Kum, Sandy Bay, and Auka respectively.

pa·ya *name of a tribe of Indians* formerly numerous, powerful, and inhabiting a wide territory, now found only in or near Dulce Nombre de Culmí, Carbón, the Paulaya River, and the Ras River. They exacted tribute from the Sumus on the Butuk down to about 1914. It is said that a Sumu army crossed over to the Ras long ago to exterminate the Payas but was itself completely wiped out. There are probably not more than four hundred Payas to be found now but it is possible that the tribe did not die out but was absorbed by intermarriage with the Ladino conquerors. Monseñor Lunardi, Papal legate to Honduras, has published a valuable study on the Payas.

pi·ra kaŋbaia saika *anti-bilious remedies;* sometimes a term in sorceries. Bilious remittent malaria is thought to be due to witchcraft; they say that since the devil causes the sickness his help is needed to cure it. The remedy used is a steam bath made with magic herbs.

pisik *the physic nut and the shrub that bears it, Jatropha curcas,* (Sp. *piñón*). The seeds are a mild laxative if the cotyledons are removed, otherwise dangerous. Leaves also applied to inflammatory swellings.

plas *species of short thick banana* (Sp. *chata,* Jam. *tobago banana,* Eastern Antilles *St. Vincent banana*) with strongly marked ridges on its skin and not so fine a flavour as the common banana. The ripe fruit cut small and boiled tastes something like stewed apples. The unripe fruit yields a good flour. The plant can stand in flood water for two weeks without being damaged.

praŋs *species of banana,* the most valued, known in commerce as Martinique, Jamaican, or Gros Michel. Indians claim that there was a native banana before the coming of white men, a wild variety with whitish, woody and insipid flesh, possibly the original waki of the Sumus. A Frenchman brought the new superior variety to the lower Wangks. After his untimely death the Indians did not know whether the fruit was poisonous but persuaded an old woman, on the plea that she could not live long in any case, to try it out. As a "France man" had brought it they called it praŋs.

prinsu· *name of a tribe of Sumu Indians.* In very bloody wars they were almost exterminated. The remnant, amalgamated with Mískitos, are thought to constitute the present inhabitants of Tungla and Layasiksa, possibly also of Quamwatla.

puhlak ∼ puhulak ∼ pu·lak *the balsa tree, Ochroma bicolor,* having very light soft wood readily eaten by termites. It is called mountain mahoe but is quite different from the mountain mahoe of Jamaica the wood of

which is hard and bluish. Puhlak also means the fibres of the fruit of the balsa similar to Java kapok.

pukru· *the provision-box tree, Pachira aquatica?*. The seeds and leaves, boiled, are said by some to be edible. The trunk and larger branches make good growing fence posts. Creoles use an infusion of the bark instead of tea.

punta·ra *soursop, Anona muricata.* An infusion of the leaves, a handful to a pint, kills lice and fleas. A cupful of a strong infusion sobers a drunken man in fifteen minutes; an infusion of three leaves only before a meal relieves dyspepsia and in the West Indies is said to facilitate sleep. A pomade made with ground ripe seeds kills lice. Either seeds or leaves would probably be anthelmintic.

pu·nu· *a wild species of anona, Anona palustris,* growing in swampy ground, with a fruit somewhat like a custard-apple but not edible because it consists almost entirely of seeds with very little flesh. The wood is soft and light and is used for the reels of harpoons.

pyu·ta kaiora ∽ pyu·ta du·sa *the cramanty tree* or coby wood, apparently a species of birch. The bark, which is bitter, strips off easily and is pink inside smelling of Russian leather. The decoction, one ounce to a pint, dose, a tablespoon every half hour, cures snake bite. Applied on a cloth to infected wounds it draws out pus, its power being increased by adding Epsom salts one ounce to a pint. For malaria the small leaves are better; adult dose twelve leaves. The wood, pinkish and bitter, is not attacked by termites and is excellent for cabinet work and for small scantlings; said to be medicinal.

pyu·ta saika *medicines to cure snake bite,* which are many but not of equal efficacy. The greatest efficacy is ascribed to a small unidentified weed with a peppery root known to the Ulwa and other Sumus. Sirsaika is very common in old plantations and on river banks. The victim of snake bite, after tying the limb above the bite, should put mashed leaves on the wound at once, changing them every hour or so, and at the same time chew up a spray of the leaves every few minutes swallowing the juice. This should be continued until other remedies are available but many consider that sirsaika is sufficient in itself. Some people prefer to use the root.

Put the pounded leaves of any of the Aristolochias on the bite and boil about three inches of the thick vine, cut up small, in two cupfuls of water. Dose, half a cupful every half hour. In bad cases take three inches each of Aristolochia guaco and Aristolochia trilobata.

Snake remedies have often also proved effective against small-pox, malaria, dysentery. Boil three leaves of any of the Aristolochias in a little water for each dose; repeat every two to four hours. For small-pox or enteritis boil a handful sirsaika leaves in a pint of water and give a tablespoonful every two to four hours, in serious cases every half hour.

rah *a race of tall and fierce Indians,* according to Honduran tradition, reputed to be cannibals, who lived at and around Raititara below Krupunta on the Butuk River. They undertook war expeditions as far as Trujillo. They were finally absorbed by the Mískitos who came later. Their descendants are still pointed out on the Butuk and in Brus and Kokobila.

ra·ma *name of a tribe of Indians* now nearly extinct but of which small remnants are found at certain points from Rama Key in the Bluefields Lagoon to the head of the Río Frío in Costa Rica. Those in Rama Key were brought there by the Mískitos and held by them in bondage. Their language is entirely distinct in structure and vocabulary from the Mískito-Sumu group. They call the Mískitos pakba.

rami du·sa *species of tree fern,* also called li·mi· du·sa *jaguar tree* because its unopened leaf bud resembles a juguar's foot.

ramuŋ *species of tall tree* with hard wood. Incisions in bark exude very small quantities of palatable milk. (Wŋk.)

riruk *the large species of so-called wild plantain* though not a plantain at all. The root of a dwarf variety is an effective remedy for snake bite, not bitter (J. E. Lewis).

sahkal *two species, red and white, of a tree* (Sp. *querosín*), similar to santa maria, good for dori-poles and for fire wood, with edible fruit. Sahkal pauni blazes like pine wood and kindles even when damp.

sakaldakawa *cooking pot of the sikla bird.* In the legend of Na·kili the soul comes to a chasm spanned by one single hair which it has to cross. Underneath is a boiling pot attended by a sikla. If the person during earthly life has been stingy with food the soul falls into the pot and perishes.

sa·lai *name of a high mountain* at the head of the Wani Creek, the highest in Nicaragua, 6500 feet, considered by the Sumus to be the abode of evil spirits.

sa·mu· *species of tree* (Sp. *leche amarilla*) the bark of which contains a yellow resin. The heart wood of large trees growing inland is very heavy, bright yellow, and durable, but the whitish wood of young trees growing in sand is very quickly devoured by termites.

sa·ni· *the river mahoe; its bark* which has many uses as a substitute for rope or to make a kind of rope and also twine for making net bags. The wood of young branches is in most varieties light and soft and used for corks but the heart wood of old trees is hard and very durable though not in the ground.

sauru· *species of stout creeping plant* with purple flowers growing only on the sea beach above high water mark. A decoction of the leaves is used to bathe feet and other parts affected with swamp itch. Creoles call both sauru and kaisni pata bayvine meaning beach vine but the plants are very different.

si·ka diŋkaia *to give a vapour bath* with the steam from boiling certain vegetable remedies or sometimes with the smoke from burning termites' nests. Apart from inducing copious perspiration these baths are valued because of the supposed magical effects of some of the herbs used—called kaŋbaika—in counteracting the effects of "poison" meaning witchcraft. Certain diseases such as bilious remittent fever and some forms of rheumatism are thought to be due to supernatural causes and therefore not curable except by aid of demons working through the herbs. Some think that the effect can only be obtained by paying the plants from which the leaves are taken either by pouring pork broth over such a plant or by laying a coin at the root and leaving it there for a little time. A magic dance is sometimes performed. Many Christians now claim to treat by si·ka diŋkaia divorced from superstitious beliefs and practice.

si·kakaira *wild basil, barsley* (Sp. *albahaca*, Hon. *kalila saika*) used with meat and in soups; said to be a vermicide even as an injection into the ears or nose; a carminative.

si·kra *guava.* A decoction of the bark is useful in diarrhoea and dysentery. An infusion made by pounding the bark in cold water and soaking it has been used successfully to remove a white film on the cornea.

siksa laboka *the base-stump or stool of the banana* used as a medicine for dysentery and violent diarrhoea. Grater, wash with water, and give the starch as a pap or gruel but in small doses as it is very constipating. It is nevertheless used as food in time of famine.

siksakumaik *species of bird* similar to a·yalila; cries sol-sol-ˈdo-ˈre-ˈdo-si-ˈre·.

si·na *senna.* A native variety of senna almost identical with that of Egypt and India is found on the banks of the Wangks and Butuk but seems to have no native name. The leaves of the siŋsiŋya are also a handy substitute for senna, so also the leaves of Cassia siamea, an ornamental tree found at mission stations.

siŋsiŋya ∽ sliŋsliŋya *a common herb, Cassia laevigata,* (Waŋks *go·ts pata*, Sp. *frijolillo*) with yellow flowers. The parched seeds are used as a substitute for coffee; the leaves are a good substitute for senna in doses of about forty leaflets. In small doses, three leaflets for an adult, one for an infant, often repeated, the hot infusion will relieve retention of urine where there is no stricture, hence

the vulgar Creole name pissabed. The bitter roots given in decoction are said to relieve abdominal pain.

sirsaika ∽ dus saika ∽ kya·ya saika ∽ ma·tis pata ∽ yu·kri· saika *bitter broom weed, Scoparia dulcis*, considered as a remedy for itch. A valuable, non-poisonous, internal and external remedy for snake bite, other bites and stings, boils, small-pox, enteritis, coughs, pains in the womb, rheumatism. Wrongly called in Spanish culantrillo *maidenhair* or mastuerzo *water-cress*.

si·sakna *an eruption* commonly on the face, sore, itching, watery, blister-like. Cause unknown; cure said to be a decoction of a species of bad thorn with red stem and root.

sisip *species of plant* something like hibiscus with sticky leaves and red flowers; medicine made by macerating the leaves in water said to be strongly ecbolic, also expectorant.

snik *pigeon pea, Congo pea, goongoo, Cajanus indicus*, a valuable food. Leaves used as a remedy for cough, as a substitute for soap, and to increase greatly the strength of fermented beverages.

spi·kiŋ *speaking* (Sp. *entrevista*). At mission stations periodical personal interviews with the minister for spiritual counsel and instruction especially in preparation for Holy Communion, Baptism, Confirmation, or Marriage. A man and his wife attend together, otherwise usually each person separately. This is not auricular confession.

spirit uplika *a kind of sorcerer* who uses Christian nomenclature and claims to be inspired by a good spirit from God or even by the Holy Spirit Himself.

sru·hi· *species of pinnate-leaved shade tree* very hard to kill. Fruit a drupe said to be poisonous. Bark said to be an effective general vermifuge but also a dangerously violent emeto-cathartic.

suklin dwarka *a small canoe* manned by toads which was supposed to ferry disembodies souls across the river at the end of the journey to Yaptimisri, which see. Hence any very small canoe especially a toy canoe.

sukun *species of tree* (Lad. *aceituna*, Cr. *school tree*) with straight trunk and pinnate leaves. The fruit is a drupe; from the seeds is obtained a greenish, palatable cooking oil. The bark is said to be very efficacious against malaria or dysentery. Adult dose, a decoction of about four square inches chipped fine, every two hours. The wood is yellowish, of light weight, very easy to saw, resistent to termites but like mahogany is not used for posts planted in the ground.

sukya ∽ su·kya ∽ su·kia *sorcerer, witch-doctor, shaman;* one who claims to be the medium of a spirit or spirits by whose power he cures disease and who are each represented by a specially prepared stick.

sum *Spanish elm, Cordia gerascanthus*, (Hon. *ma·ni· du·sa*, Cr. *samwood*, Lad. *laurel*) a valuable tree. The heart wood of the dark brown kind is practically indestructible even planted in the ground but the sap wood of any kind is useless. The wood has the strength of mahogany and the fragrance of cedar. Canoes can be made from very large trees.

sumbulo *term applied to a number of persons* in the region of Laka, Tipi, and Auka, and a few elsewhere who are characterised by acromegaly and are said to be all descendants of a girl who was stolen by Mískito sailors from an Indian village of another tribe beyond Omoa.

su·mu· *a race of Indians* closely akin to the Mískito at one time occupying a wide area from El Salvador to south-eastern Nicaragua. At present the much larger northern group, generally referred to simply as Sumu, comprises the Twahka and Panamaka tribes with which on the Banbana and the Wawa the remnants of the Ba·wihka have amalgamated. The Twahka consider themselves to be the nobility. Their dialect differs only slightly from the Panamaka. Tribes that have practically disappeared are the Prinsu, Si·lam, Ku·, Yusku·, Bo·a, and Kukra. These last three may have formed part of the southern group now represented only by the Ulwa ∽ O·hlwa ∽ Wulwa whose lan-

guage differs from the northern Sumu almost as much as Dutch from German. Dr. Walther Lehmann's Zentralamerika mentions the remnant of another tribe, the Cacaopera in El Salvador. Except in Karawala the Sumus live in the forest on the banks of rivers. They themselves often pronounce their name sumu· or almost sumú·.

sya·kwani saika *certain leaves* perhaps of native dogwood; the decoction is used to bathe infants who have a kind of diarrhoea supposed to be caused by seeing the sya·kwani, a bright green thin snake, quite harmless.

ta·la pra·kaia *a ceremony* in which the sukya or shaman passes a cotton thread through a hole bored in his tongue so that the thread is soaked with blood and then ties the soaked thread with many knots around the body of his patient to prevent the return of the disease-spirit which has been expelled.

tataku· *species of creeper, Ipomea sp.?*, called Mískito withe, used as a purgative and to coagulate rubber. Also on the Wangks and in Honduras various other creepers, especially one with bunches of large crimson flowers.

ti· *lemon-grass, Cymbopogon citratus, and fever grass, Andropogon citratus*, and the tea made from them, commonly drunk at meals and often called ti· ainwa or true tea in contrast to commercial tea which is called iŋglis ti·. Lemon-grass tea in frequent doses is a strong diaphoretic and diuretic and is therefore given in fevers. Preceded by a purge it has proved a specific remedy for influenza and its daily use during an influenza epidemic is prophylactic. It definitely will not cure malaria.

to·kruŋ *species of large tree* (Sp. *qualiqueme*) covered with thorns, growing in swampy land, bearing in February large trusses of sweet, edible, salmon-coloured flowers. The leaves, not more than three for a dose, are said to be a hypnotic anodyne. Branches planted for fence posts grow readily. The Botica del Pueblo by Francisco Cruz, 3rd. edition revised by Julián Cruz, states that the decoction of the bark is sedative and mildly narcotic with no bad effects; also relieves suppression of urine. In El Salvador it is claimed to cure dysentery, haemorrhages, boils, dropsy, catarrh, and headache.

tuburus *species of large tree, Enterolobium cyclocarpum*, (Sp. *guanacaste*) with pinnate leaves and durable cross-grained wood good for canoes, scantlings and boards. According to Cruz a decoction of the bark administered internally together with the frequent application of a plaster of the crushed fruit will cure snake bite.

tuktukya (1) *species of palm* leaves of which are used to whip children's feet to make them walk sooner. (2) *an herb* with small round seed at base of green bladder-like flower, used as snake medicine internally and externally.

tunsi·rpi *the Mískito banyan*. A decoction of the bark applied to badly lacerated wounds is markedly antiphlogistic and astringent. But it must be applied cautiously or skin will form before the underlying tissues are free from pus. At the same time iron pyrophosphate should be given internally, one dessertspoonful every hour or oftener of a solution of one grain in twelve fluid ounces of pure water.

tu·nu· *the gutta percha tree, Castilla fallax, or similar species; the resin obtained from it; the bark cloth or blanket* obtained by stripping long lengths of bark from the tree and beating them on a low bench with a hard, notched club. In this process the bark is spread out to the required width. In earlier times and recently by some Sumus this cloth was used as the only clothing, making male loincloths and female apron-strips. The form twa·nka, double construct for tu·-a-nka, and its derivatives were also, by euphemistic metonymy, used of the female pudenda tightly covered by a strip of bark cloth tucked at each end into a skein of cotton wound round the waist so that the tu·nu· hung down in front and behind, hence *the vagina*, properly ratka. In recent years (1945) the Upper Wangki Indians have restricted

these inflections to this special meaning and are offended if they are used for bark cloth for which they appear to use a new set of inflections, tu·nu·ka, etc. This restriction was not yet made in 1920, neither do the Honduran Indians accept it.

twas *papaw, Carica papaya,* (Sp. *papaya*). Seeds of the ripe papaw, thoroughly dried and well ground, form an excellent substitute for black pepper. They are an excellent anthelmintic, fresh or dry but always ground, given at night and followed by a purge in the morning; dose for children a teaspoonful, for adults a tablespoonful, mixed with sugar, syrup, or honey. Best results from three doses, night, morning, night, with final morning purge. The milk and leaves are also anthelmintic. Meat wrapped in the leaves and cooked or rubbed with the ripe fruit before cooking becomes tender but should be eaten the same day. A syrup made with the juice of the baked ripe fruit is an excellent remedy for all coughs, even for tuberculosis.

twi· wi·ta la· daukisa *the savanna magistrate is doing law,* said euphemistically of going to the privy (Z.).

udó *the moon-god of the Sumus,* companion of uhubapút but inferior to him. The planet Venus when seen above the crescent moon is considered to be his wife.

uhubapút *the sun-god of the Sumus,* their supreme deity; said to have made the world and to have appointed alwoni as his vicegerent, instructing him how to govern.

u·lak ∽ u·luk *anthropoid ape, gorilla.* Evidently an African tradition but the Indians insist that though no one now living has seen it, it used to be found in various localities and there is a legend about an u·lak who had a Mískito woman as wife and had children by her. Adults and children at once recognize a picture of a gorilla as being an u·lak. It was said to call u·-u·-u·-u·-lak-lak-lak.

unta da·wan ∽ unta du·kya *lord of the forest,* the most dreaded of the greater spirits, said by the sukyas to appear to them in the form of a jaguar. Others attribute to him the form of the bush-master snake. Others recognize many unta du·kya like man but of various colours.

usnuŋ *species of parasitic plant* with large leaves similar to those of the breadfruit, a very stout climbing trunk, and long, strong aerial roots used to tie together the timbers of a house and to make strong coarse-meshed net bags. The bag is also called usnuŋ or ustun in Honduras.

waha *leaf, especially a species of very large leaf, Calataea insignis,* often reaching the size of three feet by two, used as plates for eating or for making waterproof parcels or for lining pataki baskets. The word often means thatch in general.

waisaku· *banana-bird* (Z.), a bird of the size of a large canary, rich yellow with black markings but another kind is somewhat grey; says a variety of things such as, "A pretty bird", "Give it to Pedro", "Let's eat it", each repeated a number of times.

waiwan ∽ waiwin *species of evil spirit* which can supposedly cause sickness. Said by some to be the sukya's horse with eyes like glass shining in the night. He lives under the earth, does not usually come out, only spies. If he does come out people die.

wakumbai *a demon or phantom* said to have the form of a cow, according to others a horse, but one-legged. According to Conzemius, has a single leg in front and two behind and is the same as karswaki; appears if anyone kills the bird called kataukatau or pnamaka yu·la.

wasaki· *kind of convulsion* in new born infants who are said to wasaki· daukaia *be affected by wasaki·?.* These shivers and fits are caused, it is claimed, by the sight of a pregnant woman. But the spell is broken by giving the infant a piece of cloth or a hair from the pregnant woman, binding the article to the child's hand or foot. According to Conzemius however wasaki· is a birthmark resembling some fruit or other article of food for which the mother had longed intensely during pregnancy but had not been able to obtain.

waual *a dragon-like creature* supposed to slip into a river from the sea and live near the headwaters. When it comes down again its wings sweep the water before it into a deluge.

waula *boa constrictor*. Caribs affirm that its bite, usually harmless, is poisonous in July because the saliva is mingled with the juice of berries which is poisonous if it enters the blood stream. Waula ta·ra is a fabulous giant boa said to live at the head of certain creeks and to swallow boats.

wislu· *species of tree* very hard to kill; in Dakura identified with native dogwood, *Jamaica dogwood*, *Piscidia piscipula*, of which the leaves are said to be a fish poison and the roots narcotic.

won aisa ∽ wonaisa ∽ wol aisa *The Father*, *God*. The old Indians of the passing generation say that the conception is not originally Indian but adopted long ago from white men, presumably Spaniards. But it is certainly Indian now. Strictly the meaning is somewhat impersonal, almost The Universal Father. "Our Father" is Ya·won Aisa.

yahal *species of shrub or tree*, *Curatella americana*, the leaves of which are very rough and are used as a substitute for sand paper.

yaptimisri *the goddess of the realm of the dead*, yaptimisri kontri. She is considered to be the mother of all Mískitos and is described as having innumerable breasts.

yukwaika ∽ yukaihkai *yellow flowered broom-weed* with very tough roots. A cold infusion made by macerating the leaves in cold water is a harmless remedy given internally for fever, vertigo, and headache.

CHONTAL PHONEMES

VIOLA WATERHOUSE
INDIANA UNIVERSITY

MAY MORRISON
SUMMER INSTITUTE OF LINGUISTICS

1. Consonant phonemes
2. Vowel phonemes
3. Prosodic phonemes

1. Chontal[1] consonant phonemes are divided into two major contrastive groups: obstruents and resonants. The resonant group comprises all nonfricative continuants, the obstruent group all other consonants. Each group contains three series: 1) glottalic,[2] 2) voiceless, 3) voiced. The voiceless obstruent series is subdivided into fricatives and stops (simple and affricated). Each consonant in Fig. 1 (other than ʔ) exhibits some type of vertical symmetry[3] either within its own group or with one or more consonants of the contrasting group.

1.1. Obstruents. Series 1 of the obstruents consists of lightly glottalized affricates (f', c', č', L'), stop (k'); and the glottal stop (ʔ). Series 2.1 consists of lenis fricatives (f, s, š, x); velar x varies freely to [h]. Series 2.2. consists of simple lenis stops (p, t, tʸ, k) and affricates (c, č). Besides a voiced flap (r), series 3 consists of voiced consonants (b, d, g): these have stop allophones initially and after nasals, fricative allophones elsewhere.

Obstruents

1.	f'	c'	č'		L'		k'	ʔ
2.1.	f	s	š				x	
2.2.	p	t c	tʸ č				k	
3.	b	d		r			g	

Resonants

1.	m'	n'	ñ'		l'		w'	
2.	(N)	N	(N)		ɬ ɬʸ	Y	W	
3.	m	n	ñ	r̃	l ɬʸ	y	w	

FIG. 1

Phonemes tʸ, š, č, and č' are true alveopalatals, made with the blade of the tongue and have no appreciable offglide. They differ from alveolar consonants t, s, c, and c' in point of articulation only. The same statement applies to the difference between alveolar resonants n', n, ɬ, and l, and their alveopalatal correspondents: ñ', ñ, ɬʸ, and ɬʸ.

1.2. Resonants. Series 1 of the resonants consists of voiced continuants with glottal onset. This gives a strong fortis effect.

[1] Also called Tequistlateco, Chontal is classed as Hokan. It is spoken by 8000 or 9000 Indians in the southern part of the state of Oaxaca, Mexico. It is not to be confused with Chontal of Tabasco, a Mayan language. Data were gathered during field trips in the years 1942–8 under the auspices of the Summer Institute of Linguistics. The final manuscript (as well as that of the previous article, Learning a Second Language First, IJAL 15.106–9) was prepared by Waterhouse while recipient of a graduate scholarship at Indiana University, for which grateful acknowledgment is hereby made. Earlier writeups on which this is largely based and the analysis of the phonemic system are the work of both investigators. We wish to express our thanks to Carl Voegelin and Lauri Posti of Indiana University, and to our colleagues of the Summer Institute of Linguistics, particularly Kenneth L. Pike and William L. Wonderly for their help in the analysis and presentation of these data.

[2] Glottalic is here used to refer to two phonetic types of consonants: those with simultaneous glottal closure, and those with sequential glottalization. The latter are clusters of voiced continuant preceded by glottal stop; they are phonemic units. Phonemic clusters have a definite syllable break and a non-phonemic transitional vocoid between the two consonants.

[3] Vertical symmetry refers to correspondences between consonants of the same point of articulation but different series.

Series 2 consists of voiceless continuants: N is a voiceless nasal with four allophones [M, N, Ñ, Ŋ] each occurring before homorganic consonant, and [Ŋ] also occurring in word final; ɬ and ɬʸ are frictionless; Y and W may have a very slight degree of friction. Series 3 consists of voiced continuants: n has a velar allophone occurring before velar consonants and in word final.

Resonants w', W, and w are classed as velar consonants because they have no appreciable lip-rounding and because W and w vary freely to [ˣW] and [ˢw] respectively. They are also preceded in clusters by the velar allophones of N and n rather than by m. Trill r̃ is classed as a resonant on the basis of its continuant character[4] in contrast to r which is a single tongue-tip flap; also, r and r̃ show distributional features parallel to the series and groups in which they are placed.

1.3. Degrees of symmetry. Complete vertical symmetry appears in the labial and velar columns of both obstruents and resonants (Fig. 1).

In the alveolar and alveopalatal obstruent columns there are no glottalized stops or voiceless fricatives which correspond exactly to the simple stops, nor are there any voiced affricates. Further, there is no voiced alveopalatal stop.

The resonants, on the other hand, show complete vertical symmetry in the alveolar column, and in the alveopalatal column.

Obstruent r and resonant r̃ show vertical symmetry between themselves but lack voiceless or glottalic correspondents. Obstruent L' is completely asymmetrical within the obstruent group but shows vertical symmetries with the resonant group of laterals. The laterals could be treated as a separate subgroup with symmetries of its own.

The palatal resonants Y and y show vertical symmetry only within their own group, having no obstruent correspondents.

[4] See Kenneth L. Pike, Phonetics (Ann Arbor, 1943), p. 146.

The glottal stop (ʔ) may be said to contrast with all the other consonants.

1.4. Distribution of single consonants. Series 1 and 2.1 of the obstruents and series 3 of the resonants (excluding w and ñ which do not occur finally) are unlimited in their distribution, occurring initially, medially and finally. Series 2.2 and 3 of the obstruents and series 1 of the resonants do not occur finally (d and r also have not been found initially). In series 2 of the resonants, W does not occur finally, N and Y do not occur medially except before another consonant and N also does not occur initially; ɬ and ɬʸ are unlimited in their distribution. Examples follow.

Unlimited. Obstruents, series 1: f'agúy *he climbs*, uf'aném *corn*, waf' *tousled;* c'o·s *cold*, asé·c'i *bedbug*, amác' *land;* č'ánxa *he follows*, ič'além *clothing*, ampúč' *wild squash;* L'e *fox*, mú·L'a *moon*, axúL' *house;* k'eWám *well*, ak'áym *huaraches*, ʔe·k' *wood;* ʔawá *squash*, apiʔé *egg*, awám *wind*. Obstruents, series 2.1: foł *wet*, afó *rabbit*, xof *open*, sítʸa *cold*, kása *he stands*, emés *seed;* šuš *lend!*, káša *trunk*, kuš *curly;* xá·pe *where*, axínk' *hiccough*, fux *white*. Resonants, series 3: méxułʸ *hammock*, píme *plate*, tom *stingy;* nał *avocado*, pánaʔ *river*, čin *quiet;* řénka *lame*, kóřał *fence*, xořxóř *snore;* lamá· *full*, póle *chirimoya*, čičakwál *booth;* lʸópa *he played*, múlʸi *boy*, mulʸmúlʸ *muddy;* yaxloxma· *buzzing*, iyáʔ *I*, fuyfúy *drizzle*. Resonants, series 2: łóʔpa *I moved it*, tałáł *sticky*, imół *sheep;* tʸópa *he moved*, tʸułʸúlʸ *thick*, askúlʸ *tortilla*.

Nonfinal. Obstruents, series 2.2: pičú *day after tomorrow*, ípa *flower;* tépa *I bit*, atoló *left hand;* cé·pa *I went*, cecéʔ *squirrel;* tʸépa *he bit*, atʸú *fish;* čé·pa *he went*, číča *now;* kána *when*, akáʔ *bird*. Obstruents, series 3: bí·da *grandmother*, lobí·da *your grandmother;* goʔ *heron*, to·gáʔ *thick*. Resonants, series 1: m'ał *maguey*, fám'e *mockingbird;* n'ápa *I bought*, akán'oʔ *woman;* ñ'ápa *he bought*, koñ'í *grandchild;* l'a *there*, xál'e *which;* w'áduy *he walks*, uw'é *salt*. Resonants, series 2: Wéduy *he wants*, teWáʔ *food*.

Resonants, series 3: wáduy *he carries*, iwá *hole;* ñápa *he hit*, iñú? *heat*.

Noninitial. Obstruents, series 3: odóy *straight;* na·narά *wasp*. Resonants, series 2: toN *like*.

Nonmedial. Resonants, series 2: Yéguy *it is being stirred around*, WiY *fiesta*.

1.5. Distribution of consonants in clusters. Consonant clusters are of four major types: 1) resonant followed by obstruent; 2) obstruent followed by resonant; 3) resonant followed by resonant; 4) obstruent followed by obstruent. Clusters may be expanded by the addition of another consonant either preceding or following the original cluster. Type 1 clusters are expanded by the addition of a following resonant or obstruent. Type 2 clusters are expanded by the addition of a preceding resonant or obstruent. Type 3 clusters are expanded by the addition of a preceding resonant, or of a following resonant or obstruent. Type 4 clusters are expanded by the addition of a preceding resonant. Simple clusters occur in final position; simple or expanded clusters in initial or medial position.

In type 2 clusters of which the first member is ?, s, š or x, and the second member is a resonant of series 1 or 3, or in clusters in which a resonant of series 1 is the second member, a transitional vocoid occurs between the members of the cluster. This vocoid is of neutral quality or of the quality of the vowel preceding the cluster. These transitional vocoids differ from the phonemic vowels in that they do not function as syllabics: they are nonphonemic and not written.

Formulas are used to indicate cluster types:[5] O represents obstruent, R represents resonant; a subscript number represents the series to which the consonant belongs. R_3O_1, for example, indicates a cluster made up of a resonant of series 3 followed by an obstruent of series 1.

Type 1: $R_{2,3}O_{1,2,3}$. Expanded: $ROR_{1,3}$, $ROO_{2.2,3}$.

Type 2: $O_{1,2}R_{1,3}$. Expanded: R_3OR, $O_{2.2}OR$.

Type 3: $R_{2,3}R_{1,2,3}$. Expanded: R_3RR, RRR_1, $RRO_{2.2}$.

Type 4: $O_{1,2,3}O_{1,2,3}$. Expanded: $R_{2,3}OO$.

Final clusters are of type 1. The resonant is limited to series 3; the obstruent is of series 1 or 2. Specific combinations noted are: R_3O_1: mf', nk', n?, l?, y?; $R_3O_{2.1}$: ns.

Initial clusters are of all four types. Type 2 is the most frequent. The only type 1 initial cluster observed is R_3O_3: mb. In type 2 initial clusters, the obstruent is of series 1 or 2, the resonant of series 1 or 3. Specific combinations: O_1R_3: k'w; $O_{2.1}R_1$: sm', sn', sw', šm', šñ', šw'; $O_{2.1}R_3$: sm, sn, sy, sw, šm, šñ, šy, šw; $O_{2.2}R_3$: pw, tʸy, kw. The only type 3 initial cluster[6] observed is: R_3R_3: lʸy. In type 4 initial clusters, the first obstruent is of series 2, the second of series 1, 2.2, or 3. A type 4 initial cluster may be expanded by the addition of R_3: w. Specific combinations: $O_{2.1}O_1$: sk', šk'; $O_{2.1}O_{2.2}$: sp, st, sk, šp, štʸ, šk; $O_{2.2}O_3$: tr; $O_{2.1}O_1R_3$: sk'w, šk'w; $O_{2.1}O_{2.2}R_3$: skw, škw.

Medial clusters include the above final and initial types (except for specific combinations šw', sk'w, šk'w, which have not been observed medially) with additional specific combinations and subtypes.

In type 1 medial clusters, the resonant is of series 2 or 3 (excluding W and w) and the obstruent of any series. R_2: N, Y, however, are limited to occurrence before $O_{2.2}$. R_3: r̃ occurs only before $O_{2.1}$. Specific combinations: R_2O_1: łf', łc', łč', łL', łk', lʸf', lʸc', łč', lʸL', lʸk', l?, lʸ?; $R_2O_{2.1}$: łf, łs, łx, lʸf, lʸš, lʸx; $R_2O_{2.2}$: Np, Nt, Ntʸ, Nč, Nk, Yp, Ytʸ, Yk, łp, łt, łc, łk, lʸp, lʸtʸ, lʸk; R_2O_3:

[5] Further cluster types might be added following a more thorough investigation of Spanish loans than has been attempted here.

[6] Further type 3 initial clusters result from phrase medial or rapid speech loss of initial vowel in such words as elmilʸá? *tell me!* elpaná? *the river;* since such clusters are handled under medial types, they are omitted here.

łb, łg, ɬ^{y}b, ɬ^{y}g; R_3O_1: mf', nf', nc', nč', nL', nk', lf', lc', lč', lL', lk', ɬ^{y}k', yf', yc', yč', yL', yk', n?, l?, y?; $R_3O_{2.1}$: mf, nf, ns, nš, nx, ñš, rs, řx, lf, ls, lš, lx, yf, yx; $R_3O_{2.2}$: mp, nt, nc, nč, nk, ñt^{y}, ñč, lp, lt, lc, lč, lk, yc, yt^{y}, yč, yk; R_3O_3: mb, nd, ng, lb, ld, lg, yb, yg.

Type 1 medial clusters may be expanded by the addition of a following resonant of series 1 or 3 or a following obstruent of series 2.2. Specific combinations: $R_3O_{2.1}R_1$: nsm'; $R_3O_1R_3$: nk'm, nk'l, nk'w, y?m, y?l, y?w; $R_3O_{2.1}R_3$: nsl; $R_3O_1O_{2.2}$: nk'p, nk't, nk'k, y?p, y?t^{y}, y?k; $R_3O_{2.1}O_{2.2}$: nsp, nst, nsk, ñšp, ñšt^{y}, ñšk.

In type 2 medial clusters, the obstruent is of series 1 or 2 and the resonant of series 1 or 3. O_1 is limited to occurrence before R_3; $O_{2.1}$ before R_1 or R_3; $O_{2.2}$ before R_3. Specific combinations: O_1R_3: f'm, f'n, f'l, f'w, c'm, c'n, c'l, c'w, č'm, č'ñ, č'l, č'w, L'm, L'n, L'l, L'w, k'm, k'n, k'l, k'w, ?m, ?n, ?ñ, ?l, ?ɬ^{y}, ?y; $O_{2.1}R_1$: fm', sm', sn', sw', šm', šñ', xm'; $O_{2.1}R_3$: fñ, fl, fw, sm, sn, sl, sy, sw, šm, šñ, šɬ^{y}, św, xm, xn, xñ, xl, xw; $O_{2.2}R_3$: pw, t^{y}y, kw, cy.

Type 2 medial clusters may be expanded by the addition of a preceding resonant or obstruent. The resonant is of series 2 or 3; the obstruent of series 2.1. Specific combinations: $R_2O_{2.2}R_3$: łpw, łkw, ɬ^{y}pw, ɬ^{y}kw; $R_3O_{2.2}R_3$: mpw, nkw, lpw, lkw, ypw, ypy, yt^{y}y, ykw; $R_3O_3R_3$: ndy; $O_{2.1}O_{2.2}R_3$: fkw, spy.

In type 3 medial clusters, the first resonant is of series 2 or 3, the second of any series. Only R_3: m, n, or y occur in geminate clusters. Specific combinations: R_2R_1: Nm', Nl', Ym', łm', łn', łw', ɬ^{y}m', ɬ^{y}ñ', ɬ^{y}w'; R_2R_2: łW, ɬ^{y}W; R_2R_3: Nm, Nn, Nñ, Nl, Nw, łm, łn, łl, łw, ɬ^{y}m, ɬ^{y}ñ, ɬ^{y}l^{y}, ɬ^{y}y, ɬ^{y}w, Ym, Yñ; R_3R_1: mm', nl', lm', ym', yñ', yw'; R_3R_2: nł, lW, lɬ^{y}, yɬ^{y}, yW; R_3R_3: mm, my, nm, nn, nl, nw, ñy, lm, ln, lw, l^{y}y, ym, yñ, yl^{y}, yy, yw.

Type 3 medial clusters may be expanded by the addition of a preceding resonant of series 3 or by a following resonant of series 1 or by a following obstruent of series 2.2. Only the following specific combinations have been noted: $R_3R_3R_3$: lñy; $R_3R_2R_1$: nłm'; $R_3R_2O_{2.2}$: nłp, nłt, nłk.

In type 4 medial clusters, both obstruents may be of any series, with the limitations that only $O_{2.1}$ may follow obstruents of the same series and $O_{2.2}$: t occurs initially in clusters only preceding O_3: r, and r occurs initially only preceding t. There are no clusters of identical obstruents. Specific combinations: $O_1O_{2.1}$: ?s, ?š; $O_1O_{2.2}$: f'p, f't, f't^{y}, f'k, c'p, c't, c'k, č'p, č't^{y}, č'k, L'p, L't, L'k, k'p, k't, k't^{y}, k'k, ?p, ?t, ?c, ?t^{y}, ?č, ?k; O_1O_3: ?d; $O_{2.1}O_1$: fk', sk', šk', f?, s?, š?, x?; $O_{2.1}O_{2.1}$: fs, sx, xf; $O_{2.1}O_{2.2}$: fp, ft, ft^{y}, fk, sp, st, sk, šp, št^{y}, šk, xp, xt, xt^{y}, xk; $O_{2.1}O_3$: fg, xd; $O_{2.2}O_3$: tr; $O_3O_{2.2}$: rt.

Type 4 medial clusters may be expanded by the addition of a preceding resonant of series 2 or 3. Only the following specific combinations have been noted: $R_2O_{2.2}O_3$: łtr; $R_3O_{2.2}O_3$: ntr, nkr, ltr.

2.1. Vowel phonemes are: i, e, a, o, u. Except for e, which is phonetically an open rather than a close variety, the symbols are used with their traditional phonetic values. The phoneme /a/ has an allophone [ʌ] occurring before k', as in ñayɬ^{y}oxmák' *daily*.

2.2. Distribution of vowels. All vowels occur in word initial, medial and final: it^{y}áx *thorn*, WiY *fiesta*, t^{y}íñči *why;* ekáł *bone*, pélta *piece*, ané *road;* ásta *iguana*, sał *rough*, ípa *flower;* onsále *lion*, foł *wet*, pépo *younger sibling;* uw'é *salt*, fux *white*, apišú *pot.*

3. Prosodic phonemes are stress /'/ and length /·/. Stress and length may occur on any vowel and any position in the word.

Length does not alter the quality of the vowel with which it occurs; the lengthening-effect is slight. Its phonemic status is attested by the following word pairs: puɬ^{y}ápa *he carried in arms*, pu·ɬ^{y}ápa *it suppurated;* xak'epá *he got lost*, xa·k' epá *he agreed.*

Stress is associated with the vowel rather than with the syllable. Its phonemic status

is attested by the following word pairs: sánna *small crawfish*, sanná *star;* fáne? *three*, fané? *well-worn.*

There appear to be certain types of shift of stress with certain intonation patterns. Intonational lengthening for emphasis also occurs. Intonational lengthening is considerably long-drawn-out, in contrast to the barely perceptible phonemic lengthening. The intonation patterns which have been noted are the following: the final syllable of a statement is usually high; the final two syllables of a routine question are high-low; the final two syllables of a surprised question are high-high; the preceding syllables are spoken on a more or less even tone.

AYMARA FOLKTALES

WESTON LA BARRE
DUKE UNIVERSITY

Aymara folktales, almost without exception, are full of violence and hostility, with apprehensive, crafty and treacherous protagonists. While the usual Amerindian trickster hero, it is true, experiences all manner of vicissitudes, the world in which Qamaqe or Fox moves appears to be one of rather heightened and consistent cruelty and danger, a world in which the individual is constantly threatened and insecure.

While they omit much of the emotional coloring of the tales, these following synopses of folktales collected in original Aymara text give some notion of the typical content:

Fox, starving, goes to the mountain to seek food. He meets Condor, and bethinking himself of his own bushy tail and Condor's naked feet, he gets Condor to agree that the one who can sit longest in the cold snow will eat the other; but in the end it is Fox who is eaten.[1]

Vixen asks why Gull's children are so white and is told this is the result of baking in an oven. Vixen burns all her children to death in trying this, and then herself bursts in angrily trying to drink up the lake to get at, kill, and eat up Gull and her children.

Skunk has a friend, a little llama herder, but she dies. He takes funeral foods to her family; when he is gone, these are found to be scarabs, lizards and leaves.

Sparrow warns Linnet that Hawk is after Linnet's fledglings. Hawk, seeking to eat Sparrow in revenge, angrily chases Sparrow into a hole in a wall whence he escapes by outwitting Hawk.

In a famine, Mouse and Sparrow agree to store their food in Mouse's burrow. Mouse treacherously eats it all up, and when they fight gives Sparrow the stripes on his head which may be seen to this day.

Condor, in the guise of a tall man, steals the chief's daughter. Hummingbird bargains his aid to bring her back; henceforth Condor never comes down from Illimani to where Hummingbird flies among the crops.

The Inca destroys Llogheta, reducing it to a pile of stones, and massacres all its inhabitants because they do not submit to him.

Every night the foxes untie the burro, and he wanders about eating the crops. For this he is beaten daily until in revenge he pretends to be dead. The foxes tie themselves to the burro to drag him home to make charqui of him; but burro jumps up and drags all the foxes before the chief, who kills them.

Several songs were also collected:

A young woman deceives a young man by saying she has a hundred sheep, a yoke of bulls, a llama-load of coins, and that she is a good spinstress and weaver—but it is not so.

Two lovers leave each other, the one to seek a woman made of mud, the other a man carved of dry wood.

An ensorcelled youth seeks the witch Sparrow to release him from a hopeless love, but Sparrow only laughs at him.

Another is the lament of an Aymara soldier in the Chaco war at what his wife has done while he was gone.

Such is the unhappy and hostile world in which the Aymara live. Children's souls are liable to be kidnapped by place-demons in the earth. Women must be careful to cover the nape of the neck with a woolen wimple lest they be attacked by the terrible bodyless vampires of Aymara legend. Witchcraft and counter-witchcraft spells are constantly flying back and forth in the air, as

[1] Cf. Harry Tschopik, Aymara Texts: Lupaca Dialect, IJAL 14.108–14 (1948), **2.3. 3** has another tale consistent in tone with these: Mouse as a handsome young man marries a woman. She brings his lunch to the field, but not finding him there, breaks the head of a mouse. Mouse returns home with his head bound, saying "It was I". The woman then angrily kills their baby, at which Mouse runs away with all the food. Tschopik has used my phonemic recording, explained in his article.

men seek to harm each other's llamas, crops, children and persons. When one makes an enemy's nose bleed in a fight, it is necessary to drink some of the blood so the defeated enemy's witchcraft will not harm you. One of the best ways to get rid of a disease is to cast it into materials which are left at a crossing of paths, so that the next unwitting traveller may carry the disease off.

There is a consensus of judgment among ethnologists concerning the temperament of the Aymara. I found them truculent, hostile, silent and unsmiling; Forbes called them "intensely suspicious and distrustful . . . [with] the most deep-rooted and inveterate hatred for their white oppressors"; Grandidier considered the Aymara "cruel," Walle "hard, vindictive, bellicose, rebellious, egotistical, and jealous of his liberty . . . lacking in will, except the will to hate"; Squier says they are "a people notoriously morose, jealous, and vindictive" and "more sullen and more cruel" than the Quechua. Hewitt wrote that "They are the most difficult of all Andean peoples to cultivate; in fact, it is well-nigh impossible to establish friendly relationships with them." Yet even the Aymara is no match for the cholo or half-blood "who unites in himself the treachery, stupid cupidity, morbid distrust, hostility, and fantastic brutality of both his ancestries."[2]

The most conspicuous feature of Aymara culture is the great variety of witches, omen-takers, diagnosticians, diviners, dream-interpreters, chiropractors, surgeons, herbalists, and other medicine-men with varied curing techniques which they practice simultaneously with black magic. The Aymara materia medica, mostly botanical, is one of the most enormous yet found among a primitive people, while their folk-thought concerning diseases and pathology is highly developed. The most recent authority on the Aymara, Tschopik, remarks that "they seek omens in nearly all manifestations of nature and possess an elaborate series of techniques for divining the future; indeed the total culture of the Aymara might best be characterized as 'apprehensive.' "[3]

There is little question, then, concerning the descriptive outlines of Aymara culture and personality, as evidenced in their institutions and in their folklore alike. Is it possible that we can find some consistent dynamic behind this? It is true that cultural phenomena can never be "reduced" to psychological any more than to economic ones, and such dynamic-causal explanations never exhaust the richness of ethnographic data nor account for the specific historically-diffused forms of institutions. Culture-traits have a stubborn historicity of their own: what linguist would pay serious attention to a psychologizing or evolutionist or Marxian pretense at explanation as to why a paradigm has to have become what it is? No: the linguist is content to formulate Grimm's or Verner's or Grassman's Law, and he does not pretend to have discovered the demiurge who legislated these laws. The linguistic formulation is a factual, descriptive, historical one. It is possible that a deeper examination into the history of the culture itself may give us some insight into the Aymara temper and institutions? A functionalist interpretation, truncated at a contemporary time level—whether by the Functionalists, Marxists or analytic-minded ethnologists—always runs the risk of reckoning without its host, culture-history, and imposing causal myths upon dynamisms which are sufficiently clear when seen against the time perspective of ethnographic history. In cultural, as in linguistic change what you

[2] Weston LaBarre, The Aymara Indians of the Lake Titicaca Plateau, Bolivia, Memoir 68, American Anthropological Association (AA 50, No. 1, Pt. 2, January 1948), pages 39–40, where full references may be found.

[3] Harry Tschopik, The Aymara, in Julian H. Steward [editor] Handbook of South American Indians, vol. 2; The Andean Civilizations, BAE-B 143 (1946), pp. 501–73.

get is very largely determined by what you already have (have accumulated historically). The present suggestion pretends to be no exhaustive explanation but only one overtone of the over-determined timbre of the phenomenon, and attempts merely to put ethnographic facts into apparently meaningful juxtaposition with each other. The historical experience of the Aymara people is consistent with Aymara temperament and Aymara culture patterns: Aymara culture and personality is an historical accumulation.

From our earliest knowledge of them the Aymara have had an authoritarian, class-stratified society such as is not uncommonly found among peoples of high agricultural development. Chiefs, it appears, even in ancient times had much autocratic power and were carried about in wickerwork litters by their servants, and something like nobles are mentioned; the incumbent of the one chieftainship which has survived into modern times is deeply reverenced. The megalithic ruins of Tiahuanaco argue a highly centralized, theocratic society not unlike that of the Inca who built Cuzco. The Colla (= colonial Aymara) states long resisted the hegemony of the Inca theocratic-military society, and the Inca had repeatedly to reconquer the constantly revolting Aymara. The intense centralization and the autocracy of Inca political and economic structure are very evident. When Pizarro and his Spaniards conquered Peru, they had scarcely more than to effect a palace revolution and place themselves at the head of a hierarchy already provided them in the prior culture. Indeed, the military miracle was possible, as in Mexico, only because both Inca and Aztec were tightly integrated societies, much centralized, and with harshly sanctioned habits of conformity. With the revolt from Spain, the Aymara in Bolivia came under one of the most unmitigatedly savage and exploitative of peonages to be found anywhere; a fact that may partly explain that there have been more revolutions per year of national life in Bolivia than in any other country in history.

If the Aymara, as evidenced in their folktales (and indeed throughout the rest of their culture) are apprehensive, crafty, treacherous, violent and hostile, one reason for this may be that such a character structure is an understandable response to their having lived for perhaps as long as a millennium under rigidly hierarchic, absolutist economic, military and religious controls.

The following typical text is in the Pacasa dialect of Aymara, recorded from the dictation of the late Moisés Alvarez, who grew up on the southern shore of Lake Titicaca, a few miles north of Tiahuanaco, the ancient center of the Colla empire of pre-Incan times.

(1) ma arumaXa ɋamaɋempi ƙusuɭumpi heɋatasipXataina ma punkuna utapana. [*one night fox-with monkey-with met-had one servant-of house-his-in.*] (2) pampačaniu lunṫatasisa sarnaqaṗXataina. [*the- two robbing gone-had.*] (3) ukautanXa ma ṗesɋe ṗukuki heɋataṗXataina. [*in-this-house one soup-*[*of Quinoa*] *pot found-had.*] (4) ƙusiɭuXa amparapampiwa ṗesɋe čaususitaina ɋamaɋepi taɋe manɋantasi sasa ṗeɋepa ṗukuru apantataina ukatXa hani apsuñahamXaltainati. [*monkey-the hands-his-with soup had-taken-up fox-and-the all eat-will saying head-his pot-in-the had-put then not take-out-being-able-to.*] (5) ƙusiɭu haniu ṗeɋeXaXa mistuña munXeti ma ɋala pasťayanita pakiñataki sataina ɋamaɋeXa ƙusiɭuru kus-[iɭuXa maisar maisaru uñatatasa ma ɋučuna tata punkuru ikiskiri uñhataina ukatXa sataina ɋamaɋeru aksaru hutam akauXana ma haČa muruɋu ɋalau uthi ukaru histaskakim. [*monkey not head-my get-out like a stone get-me to-break said-to-him fox-the monkey-to-the monkey-the here and-there looking one corner señor servant sleeping seen-him-had then said-to-him fox-to-the here come to-this-place a big round stone there-is to-this hit-it.*] (6) tiulaX čeɋačeXa sasa ṗesɋe ṗuku tata punkuna ṗeɋeparu hiskataina tata punkuru toɋtapiasa. [*fox-the truth-it-will-be*

saying soup pot senor servant-of-the head-his hit-him-had senor servant jumping-up.] (7) čamakana tata punkuXa ƙusiḻuru katapitaina wali ñačantasa. [*darkness-in-the señor servant-the monkey-at-the had-grabbed well holding-him.*] (8) ḳepururuXa patronapuru uñXatayataina. [*next-day-the "patrón"-his had-had-him-look-at.*] (9) ukatXa amtaṗXataina huntʻu umampi ḻučuraña. [*then-(afterward) decided-they-had hot water-with to-skin-(to-flay).*] (10) ulƙamaru ƙamaƙeXa wastata utaru sarataina ƙusiḻupi uñhasa hani uñhasa tiularu warariña ḳaḻtataina kasarasiskakiwa sasa ukatXa ḳamaḳeXa ƙačata maƙatataina hiskaʻtasina ḳamačtamsa hilata ƙusiḻupi sataina huma laiku ma čihiru purta aka utanXa patrona ma čača taḳaskataina ṗučapataki hičaXa nayampiu čikayana munitu. [*thus fox-the again house-to-the come-had monkey coming-to-see not coming-to-see fox-the to-cry began-had marrying-I-have-to-be saying and-then fox-the slowly closer-had-come asking what's—happening-to-you brother monkey-and-the had-said you for a-(one) misfortune I-have-come-to in house-this 'patrón"-the the man seeking-had-been daughter-his-for now me-with join-(unite) wishes.*] (11) ḳamaḳeXa ukXaruXa sataina ukamačі ukaXa naya načarama ukatXa nayarupi huma lanti načantitata. [*fox-the about-this had-told-him thus-if is-it I will-unite-you then me your place to-tie-?-help-me.*] (12) ƙusiḻuXa iyau sasa ñačarayasisa ḳamaḳeru ñačantataina. [*monkey-the all-right saying untying fox-the tied-him-had.*] (13) haiṗučeḳaru tata punkumpi patronampi huntʻu uma aṗtata hutaṗXataina warXatasa ḳamaḳeru. [*afternoon-in-the senor servant-with-the "patrón"-with-the hot water holding come-they-had drenching-him fox-the.*] (14) ḳamaḳepi wararitaina ṗučamampi čikaskakiwa sasa. [*fox-the cried-out-had daughter-your-with I'm-going-to-be-married saying.*] (15) arumtuḳeXa ḳamaḳe ṗalanaka ʻtururasa ʻhalʻtXataina utata. [*night-in-the fox cords biting-with-his-teeth escaped-had house-from-the.*] (16) ukatXa ƙusiḻuru taḳaña ḳaḻetataina. [*then monkey-the to-hunt begun-had.*] (17) ma uru ḳuḻu patana heḳatataina ƙusiḻuru hani halʻtkiri. [*one day mountain upon met-him-had monkey-the not inescapable.*] (18) ƙusiḻupi hani kauksarusa ʻihtaña uñehasa ma hača alintata ḳala katXasiri yanataina pa amparapampi tinkuntañaskaspasa ukama. [*monkey not way-(direction) in-no to-run coming-(seeing) one big inclined-(leaning) stone holding pretended-had two arms-his-with to-fall-as-if-he-were-about thus.*] (19) ḳamaḳe sarXatataina sasa katsmača hanis katsma hičapi wali uñʻtitata. [*fox angrily-faced-him-had saying met-you O-no! met now well-(indeed) to-know-make-me.*] (20) ƙusiḻupi hiska kunkata arsusa sataina hilata ančičati huma unuXtayitata aka hača ḳalau ainačaru ḳurumini taḳe uywanaka taḳe haḳenaka taḳe utanaka hiwayasa ʻuntʻapisa [*monkey-the little voice-in-a speaking said-to-him brother moment-at-this thou movest-for-me this big stone down roll all, animals all, people all houses killing making-a-shambles.*] (21) humaXa naiyata huƙampi čamani katuña yanaṗʻtita uƙamkamapi naiyaXa yaḳa haḳenaka hausani. [*thou-and me-than more-with force-having to-hold help-me meanwhile I other people will-call.*] (22) ḳamaḳe čeḳačeXa sasa hača ḳala katXasitaina ƙusiḻupi haḳenaka taḳasa tukusa sarXawaiXataina. [*fox truth-will-be saying big stone held-had monkey-the people seeking pretending gone-had.*] (23) ḳamaḳe ḳarXasitainawa ḳala katusa ḳeparu amtasa ma pita antutaña kunas kunapa sasau ʻiskʻtasa maisaru ḳala antutataina ʻtatatisa uñakipasa ḳalapi unuXʻtkatainasa. [*fox tired-had-become stone holding later thinking one time to-let-go be what-may saying jumping to-one-side stone let-go-had trembling looking-around fox moved-had-not.*] (24) ḳamaḳeX uka ṗiska uñihasa sataina hiča kučau ƙusiḻuru hiwayaXa. [*fox-the this joke coming said-had now if monkey-the.*] (25) ma arumaXa ma hawira ʻtiana ƙusiḻuru heḳatataina ƙusiḻupi uñihasa hani uñihasa lunʻtataʻt keso čuratataina sasa hilata haniu kutinƙti haḳenaka laiku haniu ƙitis hutaña munaṗkiti.

[*one night one river shore monkey-the met-him-had monkey coming not coming stolen cheese had-given-him saying brother not I-have-returned people for not nobody to-come wants-(desires).*] (26) auṭhata ḳamaḳepi keso maḷṭasa sataina kaukitsa aka keso luṇṭatanta. [*hungry fox cheese tasting said where-from this cheese stolen-have-you.*] (27) hani kamačitata ukaXa ančičau uničtayanima sataina ḳusiḷu. [*not have-to-do-anything-to-me if now I-will-show-thee said monkey.*] (28) iyau sasa ḳamaḳe irpayasitaina. [*all-right-(yes) saying fox had-caused-to-arrive.*] (29) ḳusiḷuXa huḳampi hawira tiaru irpXatasa uničṭayataina hawira manḳa ma čikata hača paXsi sasa kayaXa hilata hačaskiwa nayaXa ma hisḳaki apsusta. [*monkey-the more-with river shore-at putting had-caused-him-to-look (to-see) river within a half big moon saying there-it-is brother big-this I a little took-for-myself.*] (30) ḳamaḳepi iṣṭasa hani iṣṭasa mayaki ṭuṭontataina hawiraru uka umampi hiwasa. [*fox-the hearing not hearing all-at-once jumped-had river-into there water-with dying.*]

Free Translation: The fox and the monkey were both robbers. One night they went out together and came to a servant's house where some quinoa mush was cooking. The monkey ate his with his hands, but the greedy fox put his whole head in the pot. He got stuck, and called to the monkey, "Get me a stone to break the pot!" Then the monkey looked around here and there in the dark, and came upon the head of the sleeping pongo.[4] The monkey called to the fox, "Come over here! There's a big round stone here you can hit the pot on." "Fine!" said the fox, and saying this, hit the pot against the head of the sleeping servant. The servant woke up and grabbed the monkey in the darkness, while the fox escaped. Next day he showed him to his master. They decided they would punish him by throwing hot water on him and skinning him. The fox came around to see what had happened to the monkey. When the fox approached, the monkey cried out, saying, "O you don't know what trouble I have gotten into! I have to get married!" The fox, out of curiosity, came closer and asked, "What's going to happen to you, brother?" "Alas!" said the monkey, "the master of the house has a daughter, and he wants to make me marry her." "If this is the case," said the fox, "then I will untie you and take your place." "All right," said the monkey, and the fox untied him and was tied up in his place. That afternoon the master and the servant came and drenched the fox with hot water. The fox cried out, "Don't do that! I'll marry your daughter!" But they threw the scalding water on him anyway. That night the fox bit the cords that bound him with his teeth and escaped from the house, resolving to hunt for the monkey and get his revenge. One day he encountered the monkey on a hill, in such a way that the monkey could not escape. Seeing the fox coming, and having no way of escape, the monkey pretended to hold up a large inclined stone with his two arms as if it were about to fall. "Aha!" said the fox, "Now I'll get you!" But the monkey said in a little voice, "Brother, if you make me move this stone, it will fall down and kill us both, and roll down and kill all the people and make a shambles of their huts. You are stronger than me, and if you hold it up for me meanwhile, I will go call the other people for help." "All right," said the fox, and held the stone as the monkey went off pretending to seek help. After a while the fox became tired holding the stone and thought, "Well, in any case, I can escape myself." So he jumped aside and let go the stone. He looked around trembling, but the stone had not moved. "He has fooled me again," said the fox, "but if I ever find that monkey again, I will kill him." One night he found

[4] The Bolivian word pongo *servant* comes from the Aymara punku *gate* or *door* because such a servant often sleeps at the door of the hut as a guard.

the monkey on the river shore with a piece of stolen cheese. "Brother," said the monkey, "I didn't come back because I couldn't find anyone who wanted to help." The hungry fox, tasting the cheese the monkey gave him, said "Where did you steal this cheese?" Then the monkey said, "If you promise not to kill me, I will show you." "All right," said the fox. Then the monkey led him to the river shore and pointed out to him a big half moon in the water. "There it is, brother," said the monkey. "I took only a little piece myself, and left all this for you." The fox, hardly waiting to listen to him, all at once took a jump into the river, where he drowned.

REVIEWS

SIERRA POPOLUCA SPEECH. By Mary L. Foster and George M. Foster. Smithsonian Institution Institute of Social Anthropology Publication 8. Washington, 1948. iv + 45.

Though no more than a fat journal article in length, this paper is monographic in scope. In achievement, it gives us the first published grammar covering phonemics, morphophonemics, *and* morphology of any aboriginal language south of the Rio Grande which is up to the standards that we have come to expect for grammars of languages spoken north of the Rio Grande. These standards were set by anthropologists whose first interests lay in the description of unspoken languages; the Fosters are cultural anthropologists who had ethnographic research as their avowed first interest. Perhaps, after all, structural linguistics is not such an esoteric field if a concise and comprehensive work can be produced 'as a more or less accidental and unplanned side line' and, in this instance, with the guidance and encouragement of Harry Hoijer, Stanley Newman, and Ben Elson. Of these, only Elson has had extensive residence among the Sierra Popoluca.

The Foster and Foster data on Sierra Popoluca were gathered during a ten week field trip; their analysis represents their own good insight and that of others, as already mentioned. To some extent, it is a summary of the comprehension which interested scholars have—up to date—of Sierra Popoluca.

As such, it provides a good example of the advantages gained when more than one worker analyzes the same language. In his first paper on this language, George Foster missed the voiced stops as a phonemic series,—in AA 45.531–46 (1943). Now acknowledged by the Fosters, this series was established as phonemic by Ben Elson,—in IJAL 13.13–17 (1947). In his brief IJAL paper, Elson uses the symbol for a high central vowel where the Fosters use a symbol for a less high central vowel,—but this difference does not affect the phonemic contrasts of vowels. Besides, Elson also uses the Foster symbol for the single vowel phoneme in question,—in Tlalocan 2.193–214 (1947). Other substitutions of symbols (such as two identical vowels in place of a single vowel with length diacritic) do not imply other sounds. Elson says stress is phonemic and appears to mark stress with an apostrophe in the IJAL paper, with a subscript vertical mark in the Tlalocan text; the Fosters are phonetically more explicit but noncommittal as to the phonemic status of their three levels of stress (loud, medial, weak). Another paper which essays innovations in phonemic theory,—by Hockett in IJAL 13.258–67 (1947),—is based on Elson, entirely; and, incidentally, provides a partial critique of Elson. The general agreement about Sierra Popoluca phonemes leaves little to be said,—except perhaps that their highly symmetrical contrasts could be pointed up by slight rearrangements in presentation.

The Fosters devote more space to morphophonemics than to phonemics,—just enough to clear the ground for the main body of their paper, essentially a morphology. The almost exclusive problem here is how to relate prefixes and suffixes to various types of bases and to each other. All sorts of interesting things occur in this morphology, including what I would call non-contiguous affix associations, obligatory for one member of each association (p. 15). SIERRA POPOLUCA SPEECH deserves a wide audience.

C. F. VOEGELIN
INDIANA UNIVERSITY

The Fosters have given us a good presentation, in limited space, of the essentials of the structure of Sierra Popoluca. This review will summarize the main points they make, and occasionally suggest possibilities

of restatement. Such suggestions are not adverse criticisms, but, by the very fact that they are possible, are guarantees of the accuracy and general adequacy of the original analysis. Where data are insufficient, the authors modestly indicate it.

The Contents (p. iii) of the study are: Introduction (1–2), Abbreviations and symbols (2), Phonology (3–11), Morphology (11–28), Syntax (28–38), Foreign influence (38–9), Specimen text and analysis (39–42), Vocabulary (42–5).

In the Introduction the relationship of the several Mixe-Zoque languages is clarified. The classification given by J. Alden Mason in The native languages of Middle America (*The Maya and their neighbors*, New York, 1940) 72–3 and 84, and followed by the present reviewer in his Bibliographical classification system . . . (*SIL*3.102) is shown to be erroneous. The four "Popoluca" languages of southeastern Veracruz are to be divided so that Oluta and Sayula are Mixe, along with Western Mixe and Guichigovi in Oaxaca; and Texistepec and Sierra (the latter in about 25 villages, with 10,000 speakers) are Zoque, along with Copainala and San Andres Tuxtla in Chiapas, and Santa Maria Chimalpa and San Miguel Chimalpa in Oaxaca. In view of this the reviewer would like to suggest that the name Popoluca (originally an Aztec deprecatory term) be replaced for the Sierra Popoluca by their own name for the language, ʔaŋmáṭi (*the*) *word*, in the spelling Angmatyi. The Fosters gathered their material in 1941 in Soteapan, in the course of ethnological research.

The Phonology includes: 1. Prosodic features, 2. Consonants, 3. Vowels, 4. Morphophonemics. In §1 statements of syllable structure are made (CV, CVC, CVCC, CVCCC), and the word is defined; the definition is not free of confusion between phonological and grammatical levels of analysis, and is not fully satisfactory, since, though it implies juncture phonemena, no juncture analysis is made. Stress (§1.4) is loud, medial, or weak; the cited contrasts between positions of loud and medial within a "word" show that these stresses are indeed separate phonemes. Isolated single syllables are written without stress mark, but have, of course, loud stress. Phrase melody is briefly described, but no analysis into pitch phonemes is attempted. Variations in vowel length are referred to in §1.6. On the whole, §1 includes statements many of which might better have been described after the description of vowels and consonants, to avoid anticipation, and some of which belong with morphophonemics.

The consonants (§2) are given as p, t, ť, k, ' (written ʔ), b, d, ď, g, c (written ɟ), č, s, š, h, m, n, ñ, ŋ, w, y, l, r. The reviewer suggests that the "palatoalveolars" may be better analyzed as clusters, ty, dy, cy, sy, ny; if this is so, the statement about syllable-structure will have to be modified. It appears also that short vowels do not appear as finals in an utterance, being always followed by [ʔ]; this "inorganic" [ʔ] disappears when not in utterance final, and is not written at all by the Fosters; but this is a morphophonemic statement, and "inorganic" [ʔ] is just as much present ON THE PHONEMIC LEVEL as is the "true" /'/. There are six vowels (§3), each occurring long and short: i, e, a, u, ʌ (the reviewer would prefer the symbol ə), o. The question arises whether the long vowels could be considered geminate clusters, ii, ee, etc., rather than vowel plus a phoneme of length /·/. There also seems to be some possibility that w and y are non-syllabic allophones of /u/ and /i/; if this should be true, then ť, ď, etc., are probably single phonemes.

The morphophonemics section, 4, should properly be with the grammar rather than the phonology. As the authors treat morphophonemics, we have a mixture of purely phonological statements of occurrence with statements of morphological conditioning factors. Most linguistic work up to now (including some by the reviewer!) has made this particular confusion; in the future our

analyses should be more rigid. The remarks about phrase and word stress (§4.29), though brief, are interesting and important, and show accurate analysis of phenomena all too often overlooked by linguists.

The Morphology includes: 5. General remarks, 6. The verb theme, 7. Nonthematic prefixes of the verb, 8. Nonthematic suffixes of the verb, 9. Pronouns, 10. The noun-theme, 11. Nonthematic prefixes of the noun, 12. Nonthematic suffixes of the noun, 13. Attributives, 14. Enumeratives, 15. Enclitics.

The word classes are verbs, pronouns, substantives, enumeratives, each with its own paradigmatic sets; pronouns have inflection similar to part of the verb inflection; substantives are nouns and attributives; enumeratives have a noun-like inflection. "Theme-formation" deals with bases ("simple stem or root morpheme"), and extended bases or stems, consisting of a reduplicated base, a simple or reduplicated base plus thematic (i.e., stem-deriving) affixes, or a compound of two bases. Bases are "inherently" verbs, nouns, etc. "Word-formation" deals with "the attachment of paradigmatic sets of nonthematic affixes to themes", i.e., with inflection of bases and stems. Morphological categories are: pronominal reference (possession in nouns and enumeratives, resolution in verbs); case (nouns); number (all word classes); aspect, mode, voice, agent, subordination (verbs); enumeration.

In §6 we find some general remarks about verb-stems, and then discussion of five derivational ("thematic") prefixes and a number of suffixes; the latter are either verb-forming attached to substantive themes, or qualifying—added to verbs and modifying the meaning in some special way.

The inflectional prefixes of verbs (§7) are treated as an "intransitive set", denoting the subject, and a "transitive set" denoting combinations of subject and object. When these are set forth as below some interesting relations come out:

Intransitive Subject		Transitive Subject-object			
Sg 1	'a-	3	-	1	'a-
2	mi-	3	-	2	mi-
3	∅ (zero)				
Pl 1 incl.	ta-	3	-incl.		ta-
		1	-	2	man-
		1	-	3	'an-
		incl.	-	3	tan-
		2	-	3	'iñ-
		3	-	3	'i-

First we point out that the three "intransitive" prefixes that are not zero are identical with three of the other set, and that in each case there is the same person reference involved; it appears to the reviewer that the "intransitive set" is merely the accidental grouping of those three prefixes that would be called for if we analyzed *all* verbs as "transitives": *I go* is, structurally, "it goes me", *you go* is "it goes you", *we* (incl.) *go* is "it goes us (incl.)"; if this is so, then the "zero" prefix is no prefix at all but simply the prefixless verb, with a meaning something like "there is going", "going takes place", "one performs the act of going". With this analysis, we restate to indicate that some verbs are used only in those forms in which an "impersonal" 3d person subject performs an activity upon an object of the Sg. 1st, 2d, or incl. 1st persons, and we have also a non-personal general form; such verbs are usually translated as "intransitives" or as verb-phrases with predicate nouns or adjectives.

A second restatement of the prefixes is as follows:

The subject of the verb is indicated by affixes (prefixes) in first position before the stem, thus:

Subject of 1st person: -an-
" " 2d " -iñ-
" " 3d " -a- ~ -i-

The object is indicated by affixes in second position before the stem:

Object of 1st person: '-
" " 2d " m-
" " 3d " ∅

Inclusive subject or object is t-, preceding all other prefixes.

The resulting combinations are:

Obj. 1-Subj. 3		'-a-	(= "Subj. 1 of intransitive")
2-	1	m-an-	
2-	3	m-i-	(= "Subj. 2 of intransitive")
3-	1	∅-an-	= /'an/
3-	2	∅-iñ-	= /'iñ/
3-	3	∅-i-	= /'i/
3- incl.	1	t-an-	
incl.-	3	t-a	(= "Pl. 1 incl. of intransitive")

The zero given above for 3d person object is probably, again, to be regarded as no prefix, rather than as a positive counter in the structure; in the combination of incl. t- with 1st subject -an- there is nothing for the 3d object; in the forms 'an-, 'iñ-, 'i- the initial /'/ is called for by the phonemic structure and is not to be regarded as a separate morpheme but as part of the subject morpheme. The allomorph -a- of 3d subject occurs with 1st person object forms ('-a- and t-a-); where inclusive is the object, no other 1st person morpheme occurs.

The possessive prefixes of nouns (§11) are seen to be analyzable in the same way as the verb prefixes: 'an- *my, ours* (not incl.); tan- *ours* (incl.); man- *my* (possessed in 2d person, as "you my child"); 'iñ- *your*; 'i- *his, their*. Restated, we have, first, ∅-an-, ∅-iñ-, ∅-i-, with possessor ("subject") of 1st, 2d, 3d persons respectively and possessed ("object") of 3d person (the "zero" calling forth an automatic initial /'/); then there is t-an-, with possessor 1st (-an-) inclusive (t-), there being no indicator of the 3d person possessed; and in m-an- we have possessor 1st (-an-) and possessed 2d (m-). This analysis would argue against any basic distinction between noun and verb, but there seems to be enough in the rest of the structure to justify the distinction.

The nonthematic suffixes of verbs (§8) are arranged by the authors in nine "orders" of position after the verb stem: I gerundial, II perfective, III number, IV aspect, V passive, VI purposive, VII modal, VIII completive aspect, IX incompletive aspect. From the statements given as to which orders are found together, it appears that the orders are not all homogeneous, and that various groupings can be made, as follows: I, VII, VIII, or IX (not more than one of these at a time) must be present, and I and VII may occur with only the addition of III (I–III, III–VII); one of the three suffixes in IX (the "linear" one) may also only have III, and the linear suffix in VIII may have only II or III. Orders II, III appear as already indicated, and with each other, and with IV, V, VI. These last three appear with the two non-"linear" suffixes in VIII, and IV and V appear also with the corresponding ones in IX. Accordingly, the group I, VII, VIII, IX may be called stem-extending; the others, in two groups—II and III; IV, V, VI—are secondary, depending on the presence of other elements—either of VIII or IX or pronominal morphemes. The system is complex, and the authors have not carried out their analysis with sufficient rigidity.

The personal pronouns (§9.2) are: 'ǒč *I*, míč *you*, hé' *he, she, it;* 'ǒčťam *we*, míčťam *you* pl., hé'yah *they*. The elements '- and m- were noted above as 1st and 2d object prefixes; -ťam (/ť/ from /t/ by assimilation to preceding /č/) resembles -ta'm of order II used for generalized 1st incl. or 2d pl. with verbs—cf. also the prefix t- incl.; -yah is the order II suffix for 3d person pluralization. If we make these identifications and consider '-, m-, -ťam, -yah as the morphemes previously analyzed, then the elements -əč-, -ič-, he'- might be considered the allomorphs of a verb (or verb-like) morpheme translatable as *personal pronoun* ("to be a person of a stated grammatical person"), with appropriate "intransitive" prefixes and number suffixes, the required suffix of order I having here the allomorph zero.

Nouns have the optional plural suffixes

(§12.2) -tam (human beings) and -yah (animals and objects), which are identical with the pronoun suffixes just discussed; -tam may pluralize the possessor when the latter is 1st person. The authors admit insufficient data on these plural suffixes. The case-suffixes (§12.3–.8) are illustrated only with singulars, and it is not clear just how they function as a whole.

The syntax, with such subheadings as The simple sentence, Modifying clauses, Subordinate clauses, The syntactic elements of the clause, Word order—is a competent series of statements of the conventional type based on the meaning-use of the various morphologically identifiable kinds of words treated in the previous sections. Only a more thorough analysis of the phonology of large parts of utterances—an analysis requiring further data—could provide a full basis for a syntax founded upon the combination of words (morphologically defined) with morphemes of stress and juncture and intonation to form phrases and larger units. Various kinds of combinatory changes would then be seen to be not variations in morphemes as such (the variants being allomorphs), but in words (morpheme-complexes), the variant forms of which can be called allologs. A syntax based on allologs and on phrase- and clause-forming suprasegmental morphemes would come out with many of the same classifications as does the conventional syntax, with meaning-labels as identifying tags, but the present vagueness of definition and subjectivity of analysis at many points would be eliminated. The Fosters are not to blame, of course, for not undertaking a kind of analysis for which even the theoretical basis is as yet hardly adumbrated.

The statement on Foreign influence suggests many interesting further studies.

The Specimen text is analyzed in terms of the grammar as set forth, and any criticism would be repetition of what has already been said.

The Vocabulary contains some 460 items, mostly simple themes of nouns and verbs. A cursory examination shows about a score of forms that could very well serve as points of departure for a study of the possible relation of this language to Azteco-Tanoan languages. The late B. L. Whorf included Mixe-Zoque in his great Macro-Penutian phylum; the relation of this group to others in the phylum, such as Azteco-Tanoan, would be distant, and it might well turn out after analysis by the comparative-historical procedure that such items as the score mentioned would all or most show merely accidental resemblances between the two groups. But the structure of the verb in Popoluca, even to such details as the relation of "intransitive" to "transitive" prefixes (and even the actual phonemic make-up of some of the forms themselves) is so much like what the reviewer found in Taos, that the presumption of possible genetic relationship is strengthened.

To conclude, the reviewer wishes to emphasize his general satisfaction with the Fosters' grammar, and to express the hope that on this sure foundation further work on this interesting language will be done.

George L. Trager
Foreign Service Institute
Department of State

Diferenciação e unificação do português no Brasil. By Serafim Silva Neto. Rio de Janeiro and Lisbon, n.d. 30 p.

Capítulos de história da língua portuguesa no Brasil. *id. ibid.* 97 p.

The first of these two studies was written after the second but, as is indicated by the author (p. 5), its subject matter precedes that of the other. It has no chapter divisions. The second has six chapters: Explanation; The three phases of Portuguese in Brazil; Addendum—Materials; Contact and linguistic interaction in Colonial Brazil; Present-day survey of Portuguese in Brazil; Portuguese of the Indians, in the 17th cen-

tury. The studies, though undated, are recent (references appear to works published as late as 1945), and give evidence of the author's wide acquaintance with the history of Portuguese in Brazil and with publications on acculturation and other general matters.

In the first work there is discussed the manner in which Portuguese spread in early colonial days, and Silva Neto tends to the belief that there was early differentiation in the several centers of settlement, and much influence of negro and Indian speech on the language, but that after the coming of the Portuguese court in 1808 there took place a reunification, leading to an essentially unified Brazilian Portuguese.

From this unity proceeds a later social and regional diversification, taken up in the larger book. In the Explanation, Silva Neto lists his principal conclusions (6): 1, Brazilian Portuguese must be distinguished as to its literary, colloquial, and regional usages; 2, the colonists, coming from all parts of Portugal, fused their language into a new unity; 3, the unified *koiné* established on the coast spread to the rest of the country (accounting for the archaic and uniform character of the language); 4, social strata with different ways of speaking existed from the earliest days.

The next chapter, The three phases . . ., takes up the periods 1532–1654, 1654–1808, 1808 to the present. In the first period, there were few whites, and these mostly of large land-holding families, with many negro and Indian slaves; but even then Portuguese was spread to the slaves, and some Indian terms began to enter the language. In the second period white immigration increased greatly; schools arose, and there was much concern with the "purity" of the language, and with the manner in which Portuguese was spoken by negroes and Indians. After 1808, we have the growth and spread of the Portuguese-speaking community all over the country, with the development of urban and rural varieties of speech (21); during this period there are all kinds of documents relating to rural, negro, Indian, and other "corruptions" of Portuguese. The rest of the book is occupied by various kinds of material illustrating the matters discussed in the first two chapters.

Works like this are interesting and useful as more or less popular introductions to the kinds of problems involved in the investigation of the history of a colonial language like Brazilian Portuguese. But it is evident that they can present little in the way of scientifically controlled and valid conclusions. For the necessary objective evidence is simply not yet available, not even for the formulation of the preliminary hypotheses to be subjected to testing. These books show the urgent need of at least the following kinds of linguistic investigations in Brazil: a dialect atlas of Portuguese, on a sound and scientific linguistico-anthropological basis—where the fundamental investigation will concern itself with linguistic structure as a segment of cultural behavior, rather than with antiquarian interest in particular vocabulary items; descriptive studies, on the basis of the atlas, of various sociologically determined speech differences—the language of negroes, of Indians of various stages of acculturation, etc.; descriptive studies of the still-existing Indian languages in the country; carefully controlled investigation of historical documents.

For helping in the formulation of such problems by showing what can be done in the present conditions, Serafim Silva Neto is to be praised; nor is he to be blamed for the present inadequacy of such studies in Brazil.

GEORGE L. TRAGER
FOREIGN SERVICE INSTITUTE
DEPARTMENT OF STATE

CATÁLOGO DE OBRAS ESCRITAS EN LENGUAS INDÍGENAS DE MÉXICO O QUE TRATAN DE ELLAS. DE LA BIBLIOTECA PARTICULAR DE SALVADOR UGARTE. By Salvador

Ugarte. (Preface by Daniel Kuri Breña.) Editorial Jus, México, 1949 (printed December, 1948). Pp. xxix, 221, 15 plates. 50.00 Pesos.

As the title indicates, this work is a bibliography of certain materials in and concerning Indian languages of Mexico. The author uses 'Mexico' to include all the area formerly known as New Spain; and thus some works are cited which treat languages beyond the confines of present-day Mexico. The materials cited are limited chiefly to the items in Ugarte's private collection, but a few others are included. Among the works catalogued are numerous rare items not commonly available, including some that do not appear in the standard bibliographies by Viñaza, Pilling, etc. (For example, of the three titles listed for Zoque, one published work and one manuscript are shown of which this reviewer had been unaware even after compiling an extensive and reasonably comprehensive Zoque bibliography.)

The reviewer assumes that, with a published catalog, the Ugarte collection is accessible to interested scholars; the collection is in the author's library (Lerma 276, Mexico City).

The book itself, although paper bound, is beautifully printed in two colors (red for serial numbers, headings, etc.). The edition is of 500 copies, 50 of which are numbered copies printed on special paper. The author claims to be not a linguist but, to use his own term, a bibliomaniac (bibliómano). His book, both by its luxurious and semi-antique format and by its emphasis on the rarer items, reflects the book-collector's viewpoint. It appears, nevertheless, to have been prepared with care and pride and thus to constitute a valuable contribution to the field of American Indian language bibliography.

One of Ugarte's purposes is implied in the thesis, which he quotes from García Icazbalceta, that "general bibliographies must be the consolidation of the special ones. . . ." He has presented his catalog as one of those special bibliographies which are to be useful in compiling a general bibliography such as has not yet been attempted by anyone. He mentions the existence of numerous inaccuracies in the Viñaza and Pilling bibliographies; and since Ugarte's book has been compiled from first-hand inspection of the works, we are led to hope that the author has succeeded in reducing such inaccuracies to a minimum.

Pages 1–5 consist of a general bibliography containing 56 items (without their pagination). These include a few general works on language families, but are mostly bibliographies. All of these are in the Ugarte collection, and among them are a number of bibliographies not commonly available. (One inaccuracy appears on page 3: A Bibliographical Check List of North and Middle American Indian Linguistics in the Edward E. Ayer Collection should have been listed by title; Edward E. Ayer is not the author.)

Pages 7–207 contain the catalog of published works, numbered serially 1–431. Pages 209–214 contain the catalog of manuscripts, numbered I–VIII. Items are listed alphabetically by author. Each item is described with the customary bibliographical data, including title page material, date, pagination; plus occasional brief commentary. For items that have been cited in other published bibliographies, cross-references to those bibliographies are also given. There are fifteen full-page facsimile plates from fourteen of the published works cited; most of these are reproductions of title pages.

The index groups the works by languages, as follows (the parenthetical number after each name indicates the number of published works cited for that language): Amuzgo (1); Apache (4); Atapasco (= Athapascan) (5); Ayook (1; see also Mixe); Cachiquel (2); Cáhita (6); Coca (1); Comanche (1); Cora (7); Cuitlateco (2);

Chanabal [sic; should read Chañabal] (2; see also Tojolabal); Chiapaneco (2); Chichimeca (1); Chinanteca (4); Chocho (1), Cholti (1); Chontal (1; this is Oaxacan Chontal); diversos (miscellaneous) (29); Heve (1), Huasteco (4), Huave (2); Mame (3); Matlalzingo [sic] (2); Maya (48); Mazahua (1); Mazateca (1); Mixe (5 [but no. 325, not indexed, is also Mixe]; see also Ayook); Mixteco (12); Mixteco-Montañez (1); Motul (1), Mutsun (2); Náhuatl (210); Névome (1), Nutka (= Nootka) (1); Olmeca (1); Opata (1); Otomí (19); Pame (1); Papabuco (1); Pima (2); Popolaco (2); Quiché (4); Sinaloa (1); Sonora (1); Tajolabe [sic; should read Tojolabal] (1; see also Chañabal); Tarahumar (7); Tarasco (25); Tepecano (1); Tepehua (1); Tepeguano (2); Totonaco (4); Trike (1); Tzeltal (2; see also Tzendal); Tzendal (1; see also Tzeltal); Tzotzil (4); Tzutuhil (1); Waicuri (3); Zapaluta (1); Zapoteco (13); Zapoteco-Nexitza (4); Zapoteco-Serrano (1); Zapoteco del Valle (1); Zoque (2).

In addition to the published works, the eight manuscripts (not indexed) include: Cáhita (1); Náhuatl (3); Opata (1); Otomí (2); Tarasco (2); Zapoteco (1); Zoque (1).

A rough count of the published works which are dated or assigned dates by the author shows the following distribution by centuries: 16th century, 21 items; 17th century, 35 items; 18th century, 61 items; 19th century, 188 items; 20th century, 113 items.

WILLIAM L. WONDERLY
SUMMER INSTITUTE OF LINGUISTICS

ZARYS JĘZYKOZNAWSTWA OGÓLNEGO II: ROZMIESZCZENIE JĘZYKÓW 2: ATLAS. By Tadeusz Milewski. Wydawnictwa Polskiego Towarzystwa Ludoznawczego: Prace Etnologiczne I. Lublin-Kraków, 1948. 64 pp. 70 folding maps & diagrams.

1.0 Milewski's linguistic atlas appears as a supplement to part II, Distribution of Languages, of his Outline of General Linguistics.[1] It contains 68 maps seriated downward from each macro-area: language group, language family (~ phylum), language subfamily, language, dialect, according to the data upon which each areal analysis is based. Meillet—Cohen[2] and Schmidt[3] are important sources, among many. Maps are black and white, marked by hatching and numbers, carefully scaled for similar proportions in a series.[4] Legends are in Polish and English. Points of departure and "direction of expansion" of language groups are symbolized with variously broken lines and arrows. Each map carries an approximate date for the distributions represented. Two indices preface the atlas: Index of Geographical Names (19–28), Index of Languages, Dialects, and Tribes (29–64).

1.1 American Indian languages are accounted for in the first two of seven major map sections, thus: I. South America: (maps) 1. Languages of South America. A.D. 1500; 2. Paleo-American group. A.D. 1700; 3. Tupi-Guarani family. A.D. 1500; 4. Carib family. A.D. 1700; 5. Arawak family. A.D. 1500; 6. Andean group. A.D. 1200; 7. The Quechua language; 8. Chibcha family. A.D. 1500; II. North America: 9. Languages of North and Central America. A.D. 1500; 9a. Languages of Central America. A.D. 1500; 10. Maya-Quiche family. A.D. 1500; 11. Mixtec-Otomi family. A.D. 1500; 12. Hokan-Siouan family. A.D. 1500; 13. Penu-

[1] The first part: Teoria Językoznawstwa [Theory of Linguistics], Lublin—Kraków, 1947; the third, not yet issued: Typy Języków [Types of Languages]. The present reviewer has seen only the volume here treated; part II. 1 presumably includes a rationale of the methods used in establishing distributions and in testing language interrelationships statistically (see **1.3**).

[2] A. Meillet and M. Cohen, Les langues du monde, Paris, 1924.

[3] W. Schmidt, Die Sprachfamilien und Sprachenkreise der Erde, Heidelberg, 1926.

[4] The author observes that technical bookmaking considerations have forced some modification of his original purposes.

tian family. A.D. 1500; 14. Aztec-Tanoan family. A.D. 1500; 15. Algonkin-Wakashan family. A.D. 1500; 16. Na-Dene family. A.D. 1500; 17. Eskimo-Aleut family. A.D. 1500. Map 44, Paleo-Asiatic group. A.D. 1700, is included in section VI. Maps 1–8 are based on Rivet in Meillet-Cohen and on Schmidt; maps 9–17 are based on Rivet in Meillet-Cohen, on Schmidt, and on Sapir[5]; map 44 is based on Meillet-Cohen. Milewski's Paleo-American group includes "families": Yamana (Yahgan), Alakaluf, Tehuelche, Puelche, Waikuru, Charrua, Lule-vilele, Mataco-mataguayo, Cochabot, Maskoi (Machicui), Samuku, Guató, Chiquito, Bororo-otuké (Coroados), Gestapuya, Kariri (Cayriri), Oti, Karaya, Trumai, Nambikúara, Huari, Mashubi, Chapakura, Itonama, Kanitchana, Cayubaba, Mobima, Moseten, Yurakáre, Leko, Katukina, Pano, Tuyuneiri, Cholona, Kahuapana, Arda, Tukano, Kofane, Mokóa, Witoto, Yuri, Múra, Puinawe, Sáliba, Shiriana, Máku, Auaké, Kaliána, Guahibo, Totomaco, Yaruro, Timote, Guarauno (Warrau); his Andean group has "families": Esmeralda, Puruha, Kañari, Chirino, Atalan-Yunca, Sek, Quechua (language), Aymara, Cunza-Diaguita, Allentiac-Millcayac, Araucan (Mapuche).

1.2 The remaining six sections are: III. Australia and New Guinea: 18. Languages of Australia and New Guinea. A.D. 1700; 19. Tasmanian, Narrinyeri, and Paleo-Australian families. A.D. 1700; 20. Neo-Australian family. A.D. 1700; 21. Papuan group. A.D. 1700; 21a. Fly River languages. A.D. 1700; IV. Oceania: 22. Austronesian family. A.D. 1700; V. Africa: 23. Languages of Africa. B.C. 900; 24. Languages of Africa. A.D. 1700; 25. Khoin family. A.D. 1700; 26. Bantu and Semi-Bantu languages. A.D. 1700; 27. Ngo-nke and Niger families. A.D. 1900; 28. Ubangi, Nile-Congo, Chari, Wadai, Kanuri-Tibu, Nile, and Nuba-Kunama families. A.D. 1900; 29. Semitic-Hamitic family. A.D. 1800; VI. Eurasia: 30. Languages of Europe and the Near East. B.C. 2000; 30a. Sumerian-Akkadian. B.C. 2600; 31. Languages of Europe and the Near East. B.C. 1300; 32. Languages of Europe and the Near East. B.C. 900; 32a. Languages of Ancient Palestine. B.C. 1000; 33. Languages of Europe and the Near East. B.C. 600; 34. Dialects of Ancient Greece. B.C. 500; 35. Dialects of Ancient Italy. B.C. 400; 36. Languages of Europe and the Near East. B.C. 250; 37. Languages of Europe and the Near East. A.D. 150; 38. Languages of Europe and the Near East. A.D. 350; 39. Languages of Europe and the Near East. A.D. 500; 40. Languages of Europe and the Near East. A.D. 1000; 41. Languages of Europe and the Near East. A.D. 1900; 42. Languages of Europe and Asia. A.D. 150; 43. Languages of Europe and Asia. A.D. 1900; 45. Japanese and Korean languages. A.D. 1900; 46. Andaman, Austro-Asian, and Lati families. A.D. 1900; 47. Dravidian family and Burushaski language. A.D. 1900; 48. Tibeto-Chinese family. A.D. 1900; 49. Altai family. A.D. 1800; 50. Ural family. A.D. 1800; 51. Caucasian languages. A.D. 1850; 52. The Basque language. A.D. 1850; 53. Indo-Iranian languages and the Armenian language. A.D. 1900; 54. Slavonic and Baltic languages. A.D. 900; 55. Slavonic and Baltic languages. A.D. 1900; 56. Dialects of the German language. A.D. 1900; 57. Romance languages. A.D. 1900; 57a. Rhetic dialects. A.D. 1900; VII: The World. 58. Languages of the world. A.D. 1500; 59. Languages of the world. A.D. 1900; 60. Culture cycles of the world according to P. W. Schmidt. A.D. 1500–1900; 61. Culture cycles of the world according to G. Montandon. A.D. 1500–1900; 62. Distribution of the races of man according to Stanisław Klimek. A.D. 1500. Supplementary map: The Polish language in 1948.

1.3 Two diagrams also appear: Diagram I. Showing the degrees of relationship among the native languages of Australia; Table I. and Diagram II. Showing the degrees of

[5] E. Sapir, Central and North American Languages, Encyclopaedia Britannica, 14th ed., 1929.

relationship among the 16 Papuan languages spoken around the mouth of the Fly River in New Guinea. These analyze degrees of lexical affinity statistically. The procedure is based on tabulation of cognate and non-cognate word pairs from putatively related languages.

W. D. PRESTON
PHILADELPHIA, PENNSYLVANIA

1.1 Yateqañani (Aprendamos). Primer libro de lectura. Preparado para la región del lago Titicaca por el Servicio Cooperativo Peruano Norte-Americano de Educación, Ministerio de Educación Pública. By Elaine and Guillermo Townsend et al. I: pp. 29; II: pp. 30; III: pp. 30. Lima, Peru, 1946–7. ill. pr. pref. gl. (Aymara)

1.2 ǯís mą išə (Yo voy a decir). By Ricardo Pozas Arciniega. (Junta de Protección de las Razas Aborígines de la Nación). Litografia "Ideal". Mexico, D.F., n.d. pp. 84. ill. pr. pref. gl. (Cabécar of Costa Rica)

1.3 Ch'ol I. pp. 26; 3. pp. 40. n.p., n.d. ill. dup. [SIL]

1.4 'nūmīrīvopɪ. Comanche Primer I. By Second Year Class of 1947. SIL. Norman, Oklahoma, n.d. pp. 26. ill. dup.

1.5 Huave I. pp. 28; II. pp. 27. n.p., n.d. ill. dup. [SIL]

1.6 Huichol I. n.p., n.d. pp. 30. ill. dup. [SIL]

1.7 Cartilla Huichol I. SIL. n.p., 1947. pp. 31. ill. mult. & pr.

1.8 Cartilla Maya-Español para los monolingües Mayas de Yucatan, Campechi y Quintana Roo. By Alfredo Barrera Vásquez et al. Secretaría de Educación Pública, Instituto de Alfabetización en Lenguas Indígenas. Mexico, 1946. pp. 102. ill. pr. pref.

1.9 ot?ü sörü jñatjo. Primer libro Mazahua. n.p., 1948. pp. 48. ill. dup. pref. gl. [SIL]

1.10 na jñi?i sörü jñatjo. Libro tercero Mazahua. Mexico, 1946. pp. 46. ill. dup. pref. gl. [SIL]

1.11 Mazateco II. pp. 32; III. pp. 35; IV. pp. 28. n.p., n.d. ill. dup. [SIL]

1.12 Kahu-ni tutū. Cartilla Mixteca I. SIL pp. 26. II. pp. 24. Mexico, D.F., 1948. ill. mult. pref. gl.

1.13 Tlaamapoaliz Amoxtli. By Guillermo C. Townsend. Iancayo "mexicayotl". 2d. ed. Mexihco, 1945. pp. 14. pr. pref. (Nahuatl)

1.14 Book I: Preprimer, Naaltsoos T'ááłá'ígíí. pp. 13. Book II: Primer. Naaltsoos Naaklígíí. pp. 24. By The Wycliffe Bible Translators. Education Division United States Indian Service. Phoenix Indian School Printing Department. Phoenix, Arizona. 1947, 1948. ill. pr. [SIL] (Navaho)

1.15 Cartilla Otomí de la Sierra II. SIL. n.p., 1948. pp. 28. ill. mult.

1.16 Cartilla Otomí-Español para los monolingües de la zona Otomí. By Sara Flores Sánchez et al. Secretaría de Educación Pública, Instituto de Alfabetización en Lenguas Indígenas. Mexico, 1946. pp. 140. ill. pr. pref.

1.17 Piro Cartilla I. SIL. pp. 22; II. pp. 19; III. pp. 21. n.p., n.d. ill. dup.

1.18 Yachasunchis (Aprendamos). Primer libro de lectura. Preparado para las regiones de Puno y Cusco por el Servicio Cooperativo Peruano Norte-Americano de Educación, Ministerio de Educación Pública. By Elaine and Guillermo Townsend et al. I: pp. 29; II: pp. 30. Lima, Peru, 1947. ill. pr. pref. gl. (Quechua)

1.19 Shipibo (Peru). n.p., n.d. pp. 23. ill. dup. [SIL]

1.20 Cartilla Española I. SIL. n.p., 1947. pp. 32. ill. mult.

1.21 Tarascan I. n.p., n.d. pp. 40. ill. dup. [SIL]

1.22 Cartilla Tarasco-Español para los monolingües de la zona Tarasca. By Máximo Lathrop et al. Secretaría de Educación Pública, Instituto de Alfabetización para Indígenas Monolingües. Mexico, 1946. pp. 190. ill. pr. pref.

1.23 Primer libro Tepehuane. n.p., n.d. pp. 48. ill. dup. [SIL]

1.24 Primera cartilla Tzotzil. SIL. Mexico, D.F., 1948. pp. 32. ill. dup.

1.25 Zapoteco del Istmo II. n.p., n.d. pp. 27. ill. dup. [SIL]

2.1 cuendú ñänga. [By K. L. Pike.] San Miguel el Grande, Oaxaca, Mexico, 1946. pp. 15. pr. [SIL] (6 Mixteco stories: Sp. tr. for first 2)

2.2 Tuum Kwentoj de Je'm KooyapʌAk. Un cuento del conejo. Un cuento Popoluca. SIL. Mexico, 1948. pp. 23. ill. mult. (Popoluca & Sp.)

2.3 Tuum Kwentoj de Tuum Nak. Un cuento de un sapo. Un cuento Popoluca. SIL. Mexico, 1948. pp. 7. ill. mult. (Popoluca & Sp.)

2.4 tantum xuwā chichī ntī xwaputun mpūyuh. La zorra que quiso comer el pollo. Un cuento Totonaco. SIL. Mexico, D.F., 1948. pp. 16. ill. mult.

2.5 Tu Bedina? Widabí. El ratoncito huerfanito. Un cuento conocido, dictado por la Señora Rufina de Hernández en el idioma Zapoteco que se habla en el pueblo de Atepec del distrito Ixtlán de Juárez, Oaxaca. SIL. Mexico, 1948. pp. 22 + 6. ill. dup. (Zapotec & Sp.)

3.1 Héroes de México y cuentos. SIL. n.p., 1947. pp. 38. ill. mim. (Mazateco & Sp.)

3.2 Mixteco-Español. Libro de lectura en idioma Mixteco. Mexico, D.F., 1948. pp. 34. ill. mult. gl. [SIL] (Mixteco & Sp.)

3.3 Iin Okichpil Teen Tsajtsik "Wiitsa'n Kwawtaj-Koyoot" (El muchacho que gritó, "Coyote"). By Arch McKinlay. Zacapoaxtla, Puebla, Mexico, n.d. unp. ill. mult. [SIL] (Nahuat)

3.4 rarámuri oseríame. Cuentos de los Tarahumaras. n.p., n.d. pp. 9 + (3). dup. (3 stories in Tarahumara & Sp.)

4.1 Alfabeto Tarahumara. rarámuri osirúami. SIL. n.p., 1948. pp. 19. ill. mult.

4.2 Alfabeto Tepehuana. n.p., n.d. pp. 18. ill. dup. [SIL]

5.1 juchári anápu. By Max Lathrop. Cherán, Michoacán, Mexico, June, Oct., Dec. 1946; March, June, Sep. 1947; March 1948. unp. ill. pr. (Tarascan)

5.2 bats'il k'op. Chiapas (Mexico), Jan. 1948. pp. 2. mim. & pr. (Tzeltal)

5.3 TzunipʌAn-Doto (Periódico mensual en lengua Zoque) Copainalá, Chiapas, Mexico, Nov. 1947. Dec. 1948. (nos. 1–7, 9–12) pp. 36. ill. mim., mult., pr.

6.1 Vocabulario médico: Aztec, Sierra de Puebla (Zacapoaxtla). By Arch McKinlay. n.p., n.d. pp. 3. mim.

6.2 Vocabulario médico: Chontal, Tabasco. By Margaret Harris. n.p., n.d. pp. 3. mim.

6.3 Diccionario Huave-Español. n.p., n.d. pp. 22. mult. [SIL]

6.4 Vocabulario médico: Huichol, La Piedra Gorda, Nayarit. By John McIntosh. n.p., n.d. pp. 3. mim.

6.5 Vocabulario médico: Mazateco, Huautla de Jiménez, Oax. By Victoria Pike. n.p., n.d. pp. 3. mim.

6.6 Vocabulario médico: Nahuatl, Sur de Vera Cruz (Mecayapan). By Howard Law. n.p., n.d. pp. 3. mim.

6.7 Vocabulario médico: Nahuatl, Tetelcingo, Morelos. By Richard Pittman. n.p., n.d. pp. 3. mim.

6.8 Vocabulario médico: Otomí de las Sierras, San Gregorio, Hidalgo. By Joyce Jenkins. n.p., n.d. pp. 3. mim.

6.9 Vocabulario médico: Otomí del Valle del Mesquital. By Donald Sinclair. n.p., n.d. pp. 3. mim.

7.1 te lek yach'il k'ope', ts'ibubil yu'un San Markose'. Sociedad Bíblica Americana. Mexico, D.F., 1947. pp. 89. pr. (S. Mark in Tzeltal & Sp.)

8.1 [Tzeltal Hymnal] n.p., n.d. unp. mim. [SIL]

8.2 Ach' K'opetik Yu'un Rioš. Cuentos bíblicos en el idioma Tzotzil de Chiapas, México. Lecturas publicadas para los anal-

fabetos de la tribu Tzotzil de Chiapas. Mexico, 1947. pp. 22. mim. [SIL] (11 stories)

0. The present review is prepared as the first in a yearly series which is to cover pedagogical materials in American Indian languages. The items listed above are generally designed as instruments for making American Indians literate in their native languages ± an acculturation language (here Spanish). Further purposes involve the implementation of this basic goal in terms of indoctrinations: civic (~ political, patriotic), economic, religious—which are hit upon by the administrators of the several programs. Bibliographic apparatus is organized thus: abbreviations: n.d. = no date, n.p. = no place, unp. = unpaged, Sp. = Spanish, pr. = printed, mult. = multilithed, dup. = spirit-duplicated, mim. = mimeographed, ill. = illustrated, SIL = Summer Institute of Linguistics, pref. = prefatory matter, gl. = glossary; categories: 1. = primers (± chrestomathies), 2. = folkloristic stories, 3. = simple stories, chrestomathies, 4. = abecedaries, 5. = periodicals, 6. = word-lists, 7. = bible translations, 8. = religious materials. Items are alphabetical to languages under each category.

1. In the primers (cat. 1.) language units are presented according to organizational schemata which may be said to reflect pedagogical purposes and experience. These schemata may either entail or imply statements concerning them. The statements, when recorded and codified, will constitute a pedagogical methodology in relation to the particular or general field problems which have called forth both schemata and statements. The principal (relatively non-overlapping) prefatory statements appear in translation as follows: "In order to teach people to read and write a language a primer is not enough; the teacher needs to employ many other devices. He will present mural illustrations in order to elicit comment and conversation among the children, where the sentences employed in the primer will be related to these illustrations. He will present the sentences in characters which are visible to the entire class. He will make up new sentences; he will use games like dominoes, matching exercises etc., in order to firmly establish the acquired knowledge. The teacher should not forget that this primer is only an auxiliary recourse.

"The teacher should hold in mind that in teaching the reading and writing of a language he is teaching means of human communication, and that all representations by pictures or by phonetic characters must be just as clearly understood as any oral expression.

"In order to fix knowledge of the parts of the word, in using the lists which appear in the primer, the teacher may cover each list with a slip of paper and leave visible only the corresponding sketches, so that the student may say and repeat several times what each sketch represents. The teacher will intervene whenever the sketch does not awaken in the student the idea which is supposed to be represented and which corresponds to the written word, so that he repeats, on seeing the sketches, the list of words in which the elements which are to be established appear. Then he will compare the sketches with the list, analyzing each word, if it is possible, in order to arrive at its parts (syllables and letters), until the student can read the words with the sketches covered.

"Every lesson should be written at once after it can be read." (1.2 pp. 8–9)

"The person who knows how to read one language will learn to read any other with ease. The indigene who can read his own language will soon read Spanish also, although he won't understand much of what he reads. If he doesn't speak Spanish it will take from one to six years of work on the part of the teacher in order to teach him to read in that language. If he is instructed

in the language which he knows, he'll be able to learn to read in from one to six months, and, since he already reads, the ambition and self-confidence which have been created in him will make him continue his studies until he learns the national language.

"The psychological aspect of the activity of reading is most dominant in the native language. Moreover the method followed in this Nahuatl primer operates so that the psychological aspect of learning, and, above all, the belief which many illiterates have, that reading is an unattainable art for them, are taken care of without the necessity of using the entire alphabet. The student learns to read whole lines which present concrete concepts, without reference to the fact that in those lines a limited number of orthographic symbols appear. Only five letters are used in the first eight lessons. A new symbol is introduced in each two following lessons. The student should not be taught the names of letters until lesson 39. Whole words are presented to him as friends which he is to recognize wherever he meets them. Have him look for each word in different parts of the page and on different pages, taking care that he should not recognize them by the position which they occupy on the page. Unconsciously the student comes to analyze the words into their component parts and to relate each letter to its respective sound." (1.13 cover).

"In both parts a method has been followed which facilitates teaching and learning. From the first lesson forward the student begins to read. In teaching the first lessons the teacher will not mention the names of the letters nor their sounds, but instead he will pronounce the whole word for the student when it is met for the first time in the reading, just as he would present one friend to another. Then he will have the student look for his new friend (the learned word) on other pages, which will be called populations. For example wasi will be presented to the student on the first page, which he will call Cuzco, and after he has recognized it in all the "streets of Cuzco", the page will be turned so that the student may look for his house on the second page, which will be called Juliaca, and then on the third, which will be called Puno. The teacher should be careful not to repeat the name of the word in other places where it appears, but instead to have the student recognize it by comparing one word with another until he sees that it is the same as the word formerly learned. By this process of comparison, carried on throughout the book, and through the games which will develop at the same time, the phonetic values of the letters are engraved in the mind of the student, almost unconsciously, although he will not learn their names until the end." (1.18 facing p. 1).

"1. Motivation of the class. Motivation of the class will be easy if the teacher relies upon the theme of the first sentence in each lesson. In conversation the teacher should see to it that his students are able to repeat orally the motivating sentence. 2. Presentation of an illustration which is pertinent to the conversation. Presentation of the illustration will motivate comment by the teacher and students. 3. Presentation of a placard on which the sentence is printed. 4. The teacher will write the sentence in cursive below the printed sentence. 5. The students must read aloud individually and collectively the two types of presented sentences. The teacher should handle this presentation of sentences so that the students may compare the two forms of writing. This reading exercise will be carried on until the teacher is assured that the majority of the students have memorized each of the words which make up the presented sentence. 6. When the words of the sentence are memorized, one may pass over to the analysis of the word by syllables. The teacher will break down the word (of the sentence) which has been selected to be written on the blackboard, by syllables, according to the Otomí system of syllabification. 7. Formation of new words. According

to the teacher's suggestions, the students will go ahead forming new words which the teacher will write on the blackboard so that the pupils may read them and then copy them in their notebooks. 8. Whenever it is possible in terms of acquired knowledge the student should make up not only words but also new phrases and sentences. . . .9. In order to solidify what has been learned the teacher will have the students prepare copying and dictation exercises involving the words presented in each lesson of the primer, since these words contain the letter which is to be taught and serve to establish what has been learned in the earlier lessons. 10. For the mechanics of reading, the illustrations for every lesson, the sentences studied, and the placards with words will be hung up in the most easily visible places in the class room." (1.16 pp. 2–3).

1.2 Endeictic functions of the language sequences in the primers may be partly subsumed under a table of potential interrelationships among linguistic units, cultural ~ logico-structural. Relationships which may be shown and defined for the primers, etc. are: (1.) phone (~ phoneme): (2.) Syllable (~ phonemic/phonetic sequence type): (3.) morpheme: (4.) Word: (5.) Sentence: (6.) Text: (7.) graphic devices (illustrations): (8.) orthography: (9.) cultural (~ logical) semantics. Capitals on linguistic units indicate probability of cultural recognition of the units (words may be attested as culturally recognized when an informant quotes them in response to a small-unit [e.g. word-list] elicitation technique; morphemes, because of their logico-structural consistency, may not be so attested [unless the linguist be the informant]).

1.3 A sampling of specific relationships ± brief definitions follows: relationships indicated for any given primer or presentation within the primer are not exhaustive: 2 ~ 3:(4:)5:7 in 1.12, where syllables or morphemes are followed by illustrated sentences ± words; 4:1 in 1.2, 1.14, where single phoneme contrast word pairs are juxtaposed, especially for length, tone, nasalization components of vowels. (Alternatives: mnemonics by minimal phoneme contrasts or by quasi maximal phoneme contrasts in word sequences); 4:7 in 1.2, where words and illustrations are grouped for matching; 7:4:4 in 1.1, where a limited number of words are arranged and repeated on succeeding pages, with illustrations defining key words; 7:5:4~3 in 1.2, where illustrations define sentences and sentences are reduced to words or morphemes; 8:7 in 1.2, where the alphabet is integrated with vignettes which represent sequences containing certain letters; 9:7 is the standard relationship for most of the primers; hypothetically 9:4 could occur by synonymy or bilingual translation.

W. D. PRESTON
PHILADELPHIA, PA.